ENVIRONMENTAL LAW IN CUBA

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Table of Contents

PROLOGUE

In the closing weeks of 1958, a column of the Cuban Revolutionary Army came up from the Sierra Maestra to attack government troops at Santa Clara. The leader of the column, Che Guevara, was from Argentina and knew nothing of the terrain. He was briefed by

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1. Many of the Cuban Laws (both original versions in Spanish and translations in English) referenced in this paper can be found at the Tulane Institute for Environmental Law and Policy <http://www.law.tulane.edu/programs/environmental/envirolaw/institute/cubamain.htm>.

a professor of geography at the University of Santa Clara, Antonio Nunez Jimenez, who had joined the revolution earlier that year. An ardent naturalist, Nunez had founded the Cuban Speleological Society at the age of 17 and earned a Doctorate in Arts and Philosophy at the University of Havana in 1951. He would go on with Guevara's column to Havana, manage the Agrarian Reform Program, found the Cuban Academy of Sciences, set aside nature preserves, direct research institutes, write environmental responsibilities into the Cuban Constitution, found a non-governmental organization on the proceeds from his publications, and end his career organizing protests for cleanup and environmental reform.[2]

Environmental law in Cuba rises from these roots: a long history of land abuse,[3] successive waves of revolution,[4] and a late-day awakening led by the scientific community, no less sudden in its appearance than the awakening of the United States a few decades before. After centuries of neglect, environmental policy is now on a fast track in Cuba. The instruments of this policy, in turn, are sowing seeds of law that could have major impacts on Cuban governance.

This article describes the evolution of Cuban environmental law. To begin, it hazards a summary of the machinery of government. It then moves to consider early environmental laws and policies, the emergence of a new environmental ministry in 1994, a new framework environmental law in 1997, subsequent programs for environmental impact assessment, coastal zone management, and biological diversity, and first steps towards their implementation. It ends with an assessment of special economic, political and legal challenges Cuba faces and their relationship to environmental policy. The questions are obvious. The answers are not, but their pursuit is very much in play.

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2. *See* Interview with Armando Fernandez, Investigator, Foundation for Nature and Man, in Havana, Cuba (Mar. 22, 1999) (on file with author); "Antonio Jiminez," Foundation for Nature and Man, email: fonat@cubarte.cult.cu. Antonio Nunez Jimenez also served as Vice-Minister of Culture and as Ambassador to Peru, conducted scientific exploration in the high Andes from Peru to Venezuela, led an expedition by open canoe from the sources of the Amazon to the Atlantic Ocean, published his own research on China, Africa and the Galapagos, and produced a fifty-volume analysis of Cuban national history entitled "Cuba, Nature and Humanity."

3. *See infra* text accompanying note 13.

4. A series of coups, attempted coups, armed insurrections and foreign interventions in 1809, 1848, 1868-78, 1892-98, 1906, 1917, 1930-34, 1952 (coup d'etat of General Fulgencio Batista), 1956-59 (revolution of Fidel Castro), and 1961 (Bay of Pigs invasion) are described in CUBA: A SHORT HISTORY (Leslie Bethell ed., 1993).

I. A VIEW OF THE PROBLEM

> All these islands are very beautiful, and distinguished by various qualities; they are accessible, and full of a great variety of trees stretching up to the stars; the leaves of which I believe are never shed, for I saw them as green and flourishing as they are usually in Spain in the month of May; some of them were blossoming; some were bearing fruit, some were in other conditions; each one was thriving in its own way. The nightingale and various other birds without number were singing, in the month of November, when I was exploring them. There are besides in the said island of Juana seven or eight kinds of palm trees, which far excel ours in height and beauty, just as all the other trees, herbs and fruits do.[5]
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> Letter of Christopher Columbus concerning the islands recently discovered in the Indian sea, 1492

The trees were the first thing that Europeans saw when they came to America. Europe held barely a dozen tree species.[6] The New World held more than one hundred, including the tallest, oldest, and most extensive stocks on any continent.[7] For Christopher Columbus entering the Caribbean, the contrast with arid, war-torn Spain — beaten to the ground over centuries for fire-wood and cattle — must have been intense. In his accounts, Columbus would describe the trees he saw before describing the native peoples, the geography, or even the prospects for gold that drove his expedition, and those that followed, towards one of the most lucrative and brutal conquests in the history of the world. Of all the sites Columbus visited, the most impressive was the island of "Juana," which he called "the most beautiful land human eyes have ever seen."[8] It was covered by trees. There were no snakes of any

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5. Christopher Columbus, The Letters Of Columbus On The Discovery Of America 3-4 (photo. reprint 1842) (n.d.) (unpublished collection, on file with the Lennox Library).

6. *See* STEWART L. UDALL, THE QUIET CRISIS 55 (1963).

7. *See id.* Indeed, the trees were so numerous they became enemy number one to European settlers. *See* CONRAD RICHTER, THE AWAKENING LAND 7-12 (ALFRED A. KNOPF 1966)(describing the fear and subsequent destruction of the forests of the Ohio Territory). President Theodore Roosevelt observed some years later that "[t]he American had had one thought about a tree … and that was to cut it down," *quoted in* T.H. Watkins, *Father of the Forests*, AM. HERITAGE, Feb.-Mar. 1991, at 86, 91.

8. Christopher Columbus, *quoted in* DAVID STANLEY, CUBA, LONELY PLANET 13 (1997).

kind, few reptiles, no large wild beasts, and perhaps 100,000 relatively peaceful native inhabitants.[9] This was Cuba. Within fifty years the natives were all but exterminated. It would take longer for the trees.

Cuba was initially spared the conquest by the simple fact that it had little gold. When Spain hit the jackpot in Mexico, then in Peru, Cuba became a staging area for ships and, later, slaves to clear the trees and raise tobacco, indigo, and the crop that would transform its environment and determine its future: sugar.[10] Some ninety-five percent of Cuba was under forest in 1492.[11] The woods were originally maintained, and indeed husbanded by decree, to supply the Spanish fleet.[12] With the arrival of British slavers in the 1760's however, and the rising appetite in their North American colonies for sugar and rum (John Adams would write: "I know not why we should blush to confess it, but molasses was an essential ingredient in American independence"),[13] Cuba experienced the same slash-and-burn conversion to slave agriculture seen in the American South. By the late 1800's, it was producing one fourth of the world's sugar.[14]

The sugar and slave trades would dominate Cuba's relationship with Spain and then the United States. By 1956, the U.S. owned forty percent of Cuban sugar production, a quarter of all bank deposits, one half of the railroads, and ninety percent of all electric and telephone service.[15] The City of Havana and a few Cuban beaches were American playgrounds but, beyond these enclaves, the country had been transformed. A landscape nearly totally forested at the time of Columbus — and dependent on that cover for its sustainability — was down to fifty percent cover by 1900, and by the 1950's to fourteen percent in fringes of mangroves and mountain

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9. *See id*. at 13, 40-42.

10. *See* Bethell, *supra* note 4, at 5-15.

11. *See* Cuban Ministry of Science, Technology and the Environment (CITMA), *Taller Medio Ambiente y Desarrollo* [*Workshop: The Environment and Development*] 6 (1997) [hereinafter *Workshop*].

12. *See* Bethell, *supra* note 4, at 1.

13. *Id*. at 8.

14. *See id*. at 15.

15. *See id.* at 87. In 1959, the value of United States investments in Cuba exceeded those of the U.S. in any other country in Latin America but oil-rich Venezuela; the United States also bought two-thirds of all Cuban exports and supplied about three-quarters of Cuban imports. *See id*. at 97. To secure these investments, the United States operated a naval base on Cuban soil at Guatanamo, under a 1903 lease that would expire only if and when the United States agreed.

enclaves.[16] The "most beautiful land human eyes have ever seen" was now well on its way to desertification, with some 76.8 percent of its soils ripped by erosion, salinity, acidity, and drainage; its surface waters not far behind.[17]

The Cuban environment today is affected of course by more than its pre-Revolutionary past. With infrastructures in transportation, drinking water, and sewage treatment in disrepair;[18] rudimentary-at-best industrial treatment;[19] urban housing literally falling down;[20] an economy crippled by the loss of subsidies and markets in the Eastern Bloc and harried by a United States embargo;[21] a government still groping to reconcile state control with economic development;[22] and only limited traditions of administrative process, public participation and judicial review,[23] environmental solutions in Cuba could appear to be all but unattainable, and certainly not a priority for the government or its people. Havana Harbor looks bad, smells bad, and has been identified by the United Nations as one of the ten most polluted bays in the world.[24] The Almendares River, flowing through Havana in the 1840's as "a bluish river that slides by like a sheet of glass," was described recently and more bluntly by a Cuban environmental leader as "a river full of shit."[25]

And yet, Cuba is changing. Havana Harbor is coming back.[26] Polluting industry is being stepped back from the Almendares.[27] Reforestation has put tree cover back to twenty-one percent.[28] And,

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16. *See Workshop, supra* note 11, at 6.

17. *See* CITMA, *Situacion Ambiental Cubana 1998* [*Cuban Environmental Situation 1998*] 10, 11 (1998) [hereinafter *Environmental Situation*].

18. *See id*. at 4-10.

19. *See id.*

20. *See* Dalia Acosta, *Havana Rises from the Ruins*, INTER PRESS SERVICE, Nov. 21, 1995, at 1, *available in* 1995 WL 10135938 ("In 1994, Havana witnesses 614 building collapses, 375 demolitions of unsafe buildings and thousands of emergency repairs. … ").

21. *See infra* text accompanying notes 395-401.

22. *See infra* text accompanying notes 405-445.

23. *See infra* text accompanying notes 47-63, 74-77.

24. *See* Rolando Napoles, *Havana Bay, The Island's Most Polluted Ecosystem*, INTER PRESS SERV., May 30, 1996, at 1, *available in* 1996 WL 10243084.

25. Dalia Acosta, *SOS for Cuba's Almendares River*, INTER PRESS SERVICE, Apr. 26, 1996, at 1, *available in* 1996 WL 9810253. The environmental leader quoted was Antonio Nunez Jimenez, *see supra* text accompanying note 2.

26. *See* Napoles, *supra* note 24; *see also* Dalia Acosta, *Fish Return But Problems Remain For Havana Bay*, INTER PRESS SERVICE, Nov. 20, 1996, at 1, *available in* 1996 WL 13589284 ("I sometimes see a shad jumping, or other fish attacking the sardines, something I haven't seen for a very long time," says 70-year-old Pablo Olivares, who has lived near the port of Havana for the past 40 years.").

27. *See* Interview with Fernandez, *supra* note 2.

28. *See Workshop, supra* note 11, at 6. Cuba's agricultural strategy calls for additional reforestation towards a goal of 27% of the national territory by the year 2015, largely in "forest

there are laws — new and potentially very powerful environmental laws. As unusual as it may seem, and as difficult as it might be to accept, Cuba has made environmental protection a priority goal and is taking large steps government-wide to bring it about. In this effort, and against all of the handicaps noted above and more, it has several assets of considerable value.

The first asset is the extraordinary nature of its biological resources. Scattered across the landscape in relic pockets, keys, caves, marshes, wet forests, and mountain ravines are nearly 7000 species of plants — half of all identified plant species of the Caribbean, more than a third of the number of plant species known to the United States and Canada combined.[29] The diversity of fauna is no less impressive, with twelve times as many mammal species per hectare as the United States and Canada, twenty-nine times the amphibians and reptiles, and thirty-nine times the number of bird species including several endangered species, the rare Bee Hummingbird, and the last known sighting of the Ivory-Billed Woodpecker, now extinct in the United States.[30] From the standpoint of biological diversity, research, and beneficial derivatives, Cuba is as important as any nation in the Northern hemisphere, facts of which Cubans are quite aware. Cuba's biotechnology industry has been producing biological pharmaceuticals and pest controls since the early 1980s.[31]

No less important are Cuba's coastal resources, with nearly 4, 000 miles of shoreline on the main island and an additional 4,195 outlying, mostly uninhabited coastal islets and keys.[32] Cuban beaches have the rare advantages of being both abundant and relatively unspoiled by Caribbean, or even Florida, standards. They have become a major draw for international tourism, on which much of the country's economic future now depends,[33] facts of which Cubans

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plantations" managed for sustained-yield wood production. *See* CITMA, *Republic of Cuba Report to the VIII Session of the Commission* on *Sustainable Development*, Apr. 1, 2000, at 22 [hereinafter *Report*].

29. *See* CITMA, *Cuba: Perfil Jurídico e Institucional Sobre la Diversidad Biológica* [*Cuba Legal and Institutional Profile of Biological Diversity*], Unión Mundial para la Naturaleza [Int'l Union for the Cons. Of Nature], May 1997, at 5 [hereinafter *Profile*]; Dr. Michael L. Smith, *Cuban Biodiversity: An Opportunity for Cooperation and Complementarity, in The Environment in U.S.-Cuban Relations: Opportunities for Cooperation*, INTER-AMERICAN DIALOGUE CONFERENCE REPORT at 14 (Apr. 1995).

30. *See* Smith, *supra* note 29, at 14, 16.

31. *See infra* text accompanying notes 332-338.

32. *See* Stanley, *supra* note 8, at 37.

33. *See infra* text accompanying note 255.

are also quite aware. By 1996, tourism had replaced agriculture as Cuba's primary source of revenue.[34]

A second asset is Cuba's depth in science and education. Cuba's science traditions extend back nearly two centuries to the German naturalist and geographer Alexander Von Humbolt, whose works of exploration and classification remain benchmarks in the field.[35] At the turn of the 1900's, Cuban and U.S. scientists began extensive surveys of Cuba's biological resources, forming the backbone of collections in the New York Botanical Garden, the City of Philadelphia and the Aggaziz Museum of Harvard University.[36] Harvard's Botanical Field Station at Cienfuegos contained the largest living collection of tropical plants in the western hemisphere, and was a leading educational center for U.S. students in tropical biology.[37] The University of Havana has trained natural scientists from Caribbean and Latin American countries for more than one hundred years,[38] and between 1980 to 1984 graduated more than 95,000 professionals in science and technology at the university level.[39] More than a dozen academies and institutes hold high rank in Cuban government and support nearly 30,000 employees and 214 research and field units across the country.[40] Cuban education stresses the sciences, and the education is extensive, with one of the highest literacy rates in the world.[41] It was this science cadre that would lay the foundation for the environmental movement to come. Indeed, Cuban scientists would lead it, and go on to head the agencies responsible for carrying it forward.

The Cuban environmental movement's third asset — although without doubt its most controversial one — is the open support it has received from the highest level of Cuban government, President Fidel Castro. In any nation, the support of the Chief Executive is a *sine qua non* of environmental progress without which, as United States experience shows, even with the best of laws and most active

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34. *See* Nicolás Crespo & Santos Negrón Díaz, *Cuban Tourism in 2007: Economic Impact*, in ASSOCIATION FOR THE STUDY OF THE CUBAN ECONOMY, CUBA IN TRANSITION 150, 152 (1997).

35. *See generally* ANN GAINES, ALEXANDER VON HUMBOLT, COLOSSUS OF EXPLORATION (1990).

36. *See* Smith, *supra* note 29, at 15-18.

37. *See id.*

38. *See id*.

39. *See* UNEP, *Estrategia Nacional para la Diversidad Biológica y Plan de Acción en la República de Cuba*, at 23 (1998)[hereinafter *Estrategia*].

40. *See Profile*, *supra* note 29, at 37.

41. *See* Stanley, *supra* note 8, at 51-52; Joy Gordon, *Cuba's Entrepreneurial Socialism*, THE ATLANTIC MONTHLY, Jan. 1997, at 4 (describing Cuban literacy rate at 98 percent).

of citizenry, the programs fall into stalemate.[42] Nowhere, however, may this support be more critical than in a centrist regime such as that of Cuba. The fact is, therefore, that while Cuba retained important biological resources following the Spanish and Sugar holocausts, and while a strong cadre of scientists was on hand to promote their conservation, environmental protection in post-revolutionary Cuba was on the same road to nowhere seen in many countries until the 1990's.[43] Then, suddenly, environmental protection was catapulted forward by the Cuban President, largely in response to the Rio Conference on the Environment and Development of 1992. At issue is the extent to which it will become its own institution.

II. INSTITUTIONS AND THE LAW

> [A] revolution consists in the first phase in the destruction of the unjust laws of the old society; there is no doubt that our revolution has been a destroyer of laws. More just laws, the new juridical order of the new society, that is what we are trying to create now.[44]

Fidel Castro, 1963

> Legislation is an essential element of any environmental strategy. To actually play such role, the environmental legislation has to be both efficient and effective. It comprises the Framework Law and the rest of the legal regulations geared at protecting the environment, including technical norms of environmental protection.[45]

CITMA, 1997

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42. *See generally* J. LASH ET AL., A SEASON OF SPOILS (1984) (critiquing the environmental record of the Reagan administration); *see also* Oliver A. Houck, *President X and the New (Approved) Decisionmaking*, 36 AM. U. L. REV. 535, 536-545 (1987) (describing White House opposition to Congressionally-enacted environmental programs).

43 For descriptions of pre-1990 environmental conditions in Cuba, *see generally* Mariá Dolores Espino, *Environmental Deterioration and Protection in Socialist Cuba*, ASSOCIATION FOR THE STUDENT OF THE CUBAN ECONOMY, CUBA IN TRANSITION 328 (1993); JOSÉ R. ORO, THE POISONING OF PARADISE: THE ENVIRONMENTAL CRISES IN CUBA (1992).

44. Fidel Castro, speech at Lomonosov University, Moscow (May 21, 1963), *reprinted in* DEBRA EVENSON, REVOLUTION IN THE BALANCE: LAW AND SOCIETY IN CONTEMPORARY CUBA 7 (1994). The Revolution's leader, Fidel Castro, graduated from the University of Havana with a law degree in 1950. *See* April White, *Meeting Castro*, THE LEGAL INTELLISENER, Mar. 17, 2000.

45. CITMA, *National Environmental Strategy*, June 1997, at 20 [hereinafter *Strategy*].

Cuba is having to reconcile itself with a system of public law, and environmental law, as in many countries, is pushing the envelope.

A primary purpose of the Cuban revolution was to dismantle both laws and systems viewed as anti-social and unjust. Among the first targets were private property and the practice of law, which were seen as working in concert to protect privilege and the old order. In moves that would warm the hearts of "tort reformers" and critics of the American legal system today, private lawyers were considered "parasites," law practice was nationalized, law school enrollments plummeted, and practitioners moved on to become agency legal advisors, to other fields,[46] or to Miami, Florida. At the same time, the government moved towards the redistribution of lands and the introduction of a planned economy, which required another kind of state.

By 1975, Cuba had jelled a new governmental structure.[47] An elected National Assembly of Popular Power would exercise legislative power, assisted by provincial and municipal assemblies.[48] In keeping with the theory of popular power, the National Assembly would be the ultimate decision-maker not only for full-bore laws (Leyes), but for determinations of their constitutionality.[49] Between meetings of the National Assembly, a Council of State elected from the Assembly would exercise legislative power, including interpretative power, with the authority to enact Decree Laws (Decreto-Leyes) — full laws in all respects, but subject to review and modification by the National Assembly.[50] The executive would consist of the Council of Ministers, the heads of more than twenty agencies, and within which the Executive Committee of the Council would direct and coordinate the operation of government.[51] The Council had the authority to adopt Decrees (Decretos), with the authority to bind all executive agencies, but with an ill-defined reach short of law. The agencies themselves, or Ministries, were empowered to adopt Regulations (Resoluciones, Instruciones) implementing their programs and governing their own affairs.[52] Thus, each primary branch — legislative and executive — would

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46. *See* D. EVENSON, *supra* note 44, at 8, 41.
47. *See id*. at 13, 22-23.
48. *See id*. at 23.
49. *See Profile, supra* note 29, at 9. *See also* Rajendra Ramlogan, *Protection of the Environment in Cuba: Piercing the Caribbean Iron Curtain*, 29 U. MIAMI INTER-AM. L. REV. 37, 44-46 (1998).
50. *See id*. at 10.
51. *See id*. at 10, 11.
52. *See id*. at 14.

have its plenary and executive organ with the latter exercising real power on a daily basis. The more important the decision, the farther up the chain its approval would go. The new environmental law of Cuba, for example, would go to the top, the National Assembly, for enactment as a full law.[53]

Alongside these governmental structures are two remaining powers, the judicial system and the Communist Party, neither of whose full influence on an environmental policy is easy to assess.

In concept, both the judiciary and the Justice Department are subordinate to the assemblies of popular power.[54] The court system tracks the three levels of government: local; provincial; and national — with the Supreme Court having appellate review of all lower decisions.[55] Judges are elected by their respective assemblies for fixed terms, and in the exercise of "their function of imparting justice are independent and owe obedience only to the law."[56] As noted above, however, this independence — which apparently is independence in more than name[57] — does not extend to reviewing the constitutionality of laws or regulations. The extent to which it includes the review of the legality of government acts, such as environmental impact statements or permits, is a question with no tradition for an answer,[58] and one that, as discussed later in this article, will surely be pressed by the emerging environmental law.

In 1991, the Council of State established economic chambers of the Supreme Court and provincial courts with jurisdiction over investment and related environmental disputes.[59] During this same

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53. The legislative process for environmental law is at least to some extent representative and participatory. *See* Bethell, *supra* note 4, at 134 ("The National Assembly featured freer and somewhat influential debates on issues other than macro-economic policy or foreign and military policy. On such matters as common crime, environmental protection and family legislation deputies had some influence over the content of bills.").

54. *See* D. EVENSON, *supra* note 44, at 75 (judiciary), 81 (fiscal). In 1997, the judiciary which had been subordinate to the Justice Department was made autonomous and independent in its supervision, administration and budget. *See* Ley 82, Ley Sobre los Tribunales Populares [Law of the Popular Courts], Gaceta Oficial de la Rep. de Cuba (July 14, 1997).

55. *See Profile*, *supra* note 29, at 15.

56. The Law of Popular Courts, art. 2 (1990), *quoted in* D. EVENSON, *supra* note 44, at 77.

57. *See id*. at 77-78.

58. *See id*. at 78-80.

59. *See Profile*, *supra* note 29, at 46, 47; *see also* D. EVENSON, *supra* note 44, at 210-11 (citing Decreto-Ley No. 129 (1991), De Extinción del Sistema de Arbitraje Estatal [Extinction of State Arbitration System], Gaceta Oficial Ext. (Aug. 19, 1991)). In the opinion of one Cuban jurist, these economic chambers have jurisdiction over economic and environmental disputes between economic entities (i.e., joint ventures and foreign corporations), but not over environmental disputes between citizens or corporations and the Cuban government. *See* e-mail from Lic. Vivian Hernandez, Cuban Ministry of Justice (Aug. 16, 2000) (on file with

decade, the regulation of private law practice relaxed at least to the point that it was administered by an autonomous, self-governing institution financed by attorney fees.[60] The argument for this autonomy was that government control would compromise the representation of private clients in disputes with the government itself,[61] as would, of course, environmental disputes.

Parallel to the judiciary, and subordinate as well to the National Assembly, is the Ministry of Justice (Fiscal) which operates, like the judiciary, at the national, provincial and local levels.[62] As in the United States, the Fiscal is responsible for the enforcement of law against both public and private actions; it is also responsible for proposing laws and regulations regarding criminal and administrative sanctions.[63] These responsibilities, too, would be newly activated by the arrival of complex, administrative environmental law.

The role and power of the Communist Party is, of course, the wild card in any discussion of Cuban institutions. Although its powers are not spelled out in the Constitution, the Party is described as the "superior leading force"[64] of the state and, while it does not have legislative authority, a leading commentator states it is "inconceivable" that legislation would be adopted without Party approval.[65] It is the only lawful political party, and it plays a dominant role in the selection of candidates for the assemblies.[66] Some ninety percent of assembly delegates are Party members,[67] as are all or nearly all high government officials.[68]

While the power of the Party is therefore indisputable, the role it plays and will play in environmental decision-making is less certain, or at least less visible. On the one hand, the Party's open endorsement of environmental protection and sustainable growth provides significant legitimacy to environmental programs. On the

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author). For a discussion of judicial review of environmental disputes, *see infra* text accompanying notes 470-95.

60. *See* D. EVENSON, *supra* note 44, at 45.

61. *See id*.

62. *See Profile*, *supra* note 29, at 15.

63. *See* D. EVENSON, *supra* note 44, at 80-81.

64. THE CONSTITUTION OF THE REPUBLIC OF CUBA, art. 5, *in* CONSTITUTIONS OF THE COUNTRIES OF THE WORLD, CUBA 1992 (Gisbert H. Flanz ed. & Pam Falk trans., release 2000-1, 2000).

65. *See* D. EVENSON, *supra* note 44, at 29.

66. *See id*. at 26-27.

67. *See id*. at 39, n.38 ("only 22 of the 589 delegates to the [national] assembly are not members of the Party or the UJC").

68. *See id*. at 39, n.37 ("The Council of State is composed almost exclusively of the highest level of party leadership ….").

other hand, environmental concerns often bump up against other interests at all levels of government, and the Party may play, and by report does play, an important role in their resolution. Each of Cuba's thirteen provinces and the special district of Havana are directed by a Governor, who is the official decision-maker, and a First Secretary of the Communist Party, who may be the boss-in-fact.[69] On at least some occasions, local differences — the expansion of a particular mining operation, for example — are said to be resolved in an informal, Godfather-like fashion by the Secretary, whose recourse on appeal runs directly to Fidel Castro.[70]

Differences in environmental policy may follow this course as well. A hotly-disputed question of road and bridge access to outlying keys for the development of tourism — areas prized and defended by ecologists at oceanic and science institutes[71] — was referred to the Cuban Vice President, the Secretary General of the Council of Ministers and a high Party official.[72] The bridge dispute was resolved by requiring the use of "ecological bridges," structures that would allow for the free flow of water and aquatic organisms, but would obviously also facilitate the development of the keys.[73] In the end, the decision was political, as of course it would have been in the United States. In the case of Cuba, the political arbiter is the Party.

To this wild card must be added another uniquely Cuban dimension, the mass organizations of popular power. The Cuban Constitution recognizes, and thus blesses, institutionalized unions of laborers, small farmers, women, youth, and neighborhood Committees for the Defense of the Revolution.[74] These organizations have, *inter alia*, the power to nominate candidates for the assemblies[75] and to propose legislation.[76] By no means independent of government or the Party, these organizations nonetheless provide a forum for public opinion, proposals, opposition to proposals, and

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69. *See* Interview with Dr. Pedro Monreal, Professor of Economics, Univ. of Havana (Mar. 22, 1999).

70. *See id.*

71. *See generally*, Dalia Acosta, *Stone Bridge Threatens Coastal Ecosystem*, INTER PRESS SERVICE, Oct. 3, 1995, *available in* 1995 WL10134676.

72. *See* Interview with Monreal, *supra* note 69.

73. *See id.* A few of the more vocal environmentalist opponents of this compromise are said to have been reassigned to other jobs, *see id.*

74. *See* Bethell, *supra* note 4, at 126-27; *see also* D. EVENSON, *supra* note 44, at 23, 25.

75. *See* D. EVENSON, *supra* note 44, at 25.

76. *See Profile*, *supra* note 29, at 16.

even embarrassment of public officials, within the uncertain confines of speech not considered to be inimical to the state.[77]

Alongside these "governmental, non-governmental organizations" is a growing number of societies and foundations that are less governmental and more akin to the status of non-governmental organizations in the US and other countries. In the lead among these groups are organizations of scientists such as the National Zoological Society, and environmental organizations such as Pro Naturaleza and the Foundation for Man and Nature.[78] There are few established rules for these new entities;[79] they are out on the edge, part of something new.

How all of this institutional structure … official, quasi-official and even more-quasi-official … will respond to the imperatives of new law, new forms of economic enterprise, administrative process, citizen participation, and judicial review brought about by a changing economy and environmental law, is a question at the heart of Cuba's future.

III. THE ENVIRONMENTAL AWAKENING

To live on earth is no more than duty to make it well.[80]

José Marti

Environmental protection, or "conservation" in the language of an earlier day, did not begin with the Castro Revolution. At the turn of the century, the Cuban revolutionary and poet José Marti was

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77. *See* D. EVENSON, *supra* note 44, at 24-31. *See also* Bethell, *supra* note 4, at 135:

> The stimulation of citizen complaints to correct local government errors, and the satisfaction of some demands, marked a fundamental difference between politics in the first fifteen years of revolutionary rule and those thereafter. Such protests had been limited, and at times repressed, in the earlier years when the only permissible mode of political participation was mass mobilization. In a more institutionalized authoritarian setting, the regime now relied on subtler policies. At the local level citizens were allowed — at times encouraged — individuals to voice criticisms of specific problems; for such purposes, Cuba now had considerable freedom of expression. The authoritarian constraints, however, limited freedom of association at all levels. Critics of the regime were not allowed to associate in protest or criticism of government policies. Moreover, even at the local level, more general or abstract criticism of the government was frowned upon.

78. *See infra* text accompanying notes 459-468.

79. For the rules that do exist, *see infra* notes 463-465.

80. Jose Marti, ESPIRITU DE MARTÍ, (La Habana, Cuba, 1946), *quoted in* Fredric Evenson, *A Deeper Shade of Green: The Evolution of Cuban Environmental Law and Policy*, 28 GOLDEN GATE U. L. REV. 489, 489 (1998).

writing in the vein of Henry David Thoreau, and his popularity reflects the extent to which those views resonated with the Cuban people. Cuba's first steps in conservation, as in the United States, were to set aside areas for parks and forests and then to address the abuse of the land.[81] Roughly fifty years behind the timetable of the United States, Cuba declared its first national park in 1930, followed in succeeding years by the designation of other scattered refuges and natural areas.[82] Designations for the most part only in name, they were strengthened by one of the early acts of the revolutionary government in 1959, the Law of Agrarian Reform. One chapter, entitled "On the Conservation of Forests and Soils," placed these newly created reserves under management regimes.[83] The well-known Zapata Swamp on Cuba's southern coast was one of the first new additions, and the beginning of a long and successful program to restore the Cuban Crocodile, at the time believed to be extinct.[84] Youth conservation brigades took to the field; projects of reforestation began.[85]

The first Communist Party Congress in 1975 identified the need to create an agency to attend to environmental problems,[86] and in 1976 the first Constitution declared that:

> To assure the well being of its citizens, the state and the society will protect nature. It is incumbent on the responsible agencies and on each citizen as well to see that the waters and air are maintained in a clean condition and that the soil, flora and fauna are protected.[87]

Cuba then followed a familiar-looking bureaucratic path towards this goal. In 1976, it established a National Commission for the

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81. The United States established its first national parks and forests in the late 1800's, and initiated soil and water conservation programs in the 1930's. *See generally* STEWART L. UDALL, THE QUIET CRISIS (1963) (describing rise of U.S. conservation programs).

82. *See* Amnerys González Rossell and Antonio Perera Puga, CITMA, *Experiencias Relacionadas con las Areas Protegidas Abordadas a Traves del Proyecto Decreto-Ley del Sistema Nacional de Areas Protegidas a Implementarse en Cuba* [*Experiences Relating to Protected Areas Under the Law of Protected Areas in Cuba*](n.d.)(on file with author).

83. *See Profile, supra* note 29, at 24.

84. *See* Roberto Ramos Targarona, *Manejo en Cautiverio en el Zoocriadero de la Cienaga de Zapata* [*Management in Captivity on the Crocodile Farm in the Zapata Swamp*], FLORA Y FAUNA, 1998, at 10; *see also* Interview with Roberto R. "Toby" Targarona (Oct. 1999).

85. *See Profile, supra* note 29, at 24.

86. *See id.*

87. CONSTITUCIÓN, art. 27 (1976).

Protection of the Environment and the Conservation of Natural Resources (COMARNA).[88] Essentially a conglomerate of all agencies with environmental responsibilities in Cuba[89] — ranging from public health, to water supply, to fisheries, to sugar — what COMARNA offered in inclusiveness it lacked in authority independent of its members, watering its activities down to the least common denominator, with little program result.[90]

In 1981, Cuba followed the emerging mega-law models in Latin America and adopted Law 33, one of the more forward-looking environmental statutes of its day[91] — perhaps, as a Cuban official has subsequently observed, too far ahead of its day.[92] Ahead or not, without an implementation mechanism more effective than COMARNA, Law 33 did not travel very far. In 1990, Cuba made one more try at collective management in Decree-Law 118, allocating specific environmental responsibilities among more than eight separate Ministries and authorizing a ninth, a new Ministry of Science, Technology and the Environment (CITMA) to replace COMARNA.[93] In time, CITMA would take over the game.

Events of the 1990's were precipitated by a number of factors, none the least of which was a recognition of the need for a single agency in charge. Environmental problems, particularly in Havana, were becoming more obvious and more acute. The crash of the Soviet Union and the ensuing economic crises in Cuba — as severe an economic shock as has been experienced by any modern country short of war[94] — led to several economic and political changes with potentially significant environmental consequences. The changes included new forms of farm ownership, new private enterprises, new foreign enterprises with joint-venture capital and property rights, and an upsurge of interest in mineral development and tourism.[95] None were addressed by existing law.[96] In light of these

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88. *See Profile*, *supra* note 29, at 25; *see also* Ramlogan *supra* note 49, at 47-48.

89. *See id*. at 48.

90. *See* Orlando Rey Santos, *Reflections on the Legislative Process of the New Environmental Law*, *in* CUBAN ENVIRONMENTAL LAW 11, 12-13 (Jerry Speir ed., 1999).

91. *See id.* at 11.

92. *See id.* at 11, 12. On the other hand, the vagueness and rhetorical quality of Law 33 led some critics to dismiss it as "political 'garbage'." *See* B. Ralph Barba and Amparo E. Avella, *Cuba's Environmental Law*, *in* ASSOCIATION FOR THE STUDY OF THE CUBAN ECONOMY, CUBA IN TRANSITION 276 (1995).

93. *See Profile*, *supra* note 29, at 25.

94. *See infra* text accompanying notes 395-401.

95. *See infra* text accompanying notes 172, 432-39.

96. *See* Santos, *supra* note 90, at 11, 12.

exigencies, perhaps the most unpredictable development was Cuba's response to the 1992 World Summit at Rio de Janeiro.

Cuba had long been an active player in international environmental agreements,[97] engagement that could have been seen by skeptics as attempts to snatch the spotlight without risking serious economic consequences. Whatever the merits of this skepticism, Rio was different both for the level of commitment expressed by the Cuban President[98] and for the effect, in turn, that Rio appears to have had on him and on Cuba. In a speech to the Rio conference, Fidel Castro found his theme:

> If we want to save humanity from destroying itself, we have to distribute more equitably the riches and the available technologies on this planet. Less luxury and pilfering from a few countries for less poverty and hunger for the rest of the earth. No more transfer to the Third World of lifestyles and habits of consumerism that ruin the environment. Make human living more rational. Apply international economic order that is just. Use all the science necessary for sustainable development, without pollution. Pay the environmental debt, not the foreign debt. Eliminate hunger, and not humankind.[99]

Before the year was out, the Cuban Constitution was amended to read:

> The State protects the environment and the natural resources of the country. It recognizes their close link with the sustainable economic and social development for making human life more sensible, and for ensuring the survival, welfare, and security of present and future generations. It corresponds to the competent organs to implement this policy.
> It is the duty of the citizens to contribute to the protection of the water and the atmosphere, and to the

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97. As of 1994, Cuba had ratified thirty international conventions on environmental protection; the United States had ratified nineteen. *See International Treaties on the Environment: Cuba and the United States, in The Environment in U.S.-Cuban Relations, Recommendations for Cooperation*, INTER-AMERICAN DIALOGUE, January 1997, at 69 (on file with author).

98. *See supra* text accompanying notes 42-43.

99. *See Workshop*, *supra* note 11, at 5.

> conservation of the soil, flora, fauna, and all the rich potential of nature.[100]

"Sustainable development" and "future generations" are, of course, the language of Rio,[101] as is Rio's affirmation of state "responsibility" for environmental protection.[102]

Given that words are cheap, and that the constitutions of many countries read far more grandiloquently than they perform in practice (an observation particularly true for the environmental provisions of many Latin American constitutions),[103] it is worth a pause to ask whether anything different happened here. One at least rhetorical difference, in the view of Cuban legal scholars, is the role of constitutional law in Cuban socialism.[104] Distinct from the conservative approach of classic civil law jurisdictions, the Cuban constitution is said to be proactive, striving to create a new citizen and now a new environmental citizen;[105] in theory, the words mean more. Of course, the same was said of the many guarantees, largely hollow, of the constitution of the Soviet Union.

On the other hand, post-revolutionary Cuban law promoted public and collective values from the start.[106] Environmental values fit easily into this framework,[107] as did Law 33 in 1981 stating as its goal a society, in contrast with capitalist regimes, "where the good of man is paramount, and where the social character of property facilitates environmental protection and the rational use of natural resources."[108] In fact, one of the more hyperbolic criticisms of

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100. CUBAN CONSTITUTION, *supra* note 64, art. 27.

101. *See United Nations Conference on Environment and Development: Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests [Adopted at Rio de Janeiro, June 13, 1992]*, 31 I.L.M. 881 (1992); *see also supra* text accompanying notes 99-100.

102. *See id.*

103. *See* JOSÉ M. BORRERO NAVIA, LOS DERECHOS AMBIENTALES: UNA VISION DESDE EL SUR [ENVIRONMENTAL RIGHTS: A VISION FROM THE SOUTH] 94-128 (1994)(discussing weaknesses in the implementation of Latin American constitutional provisions for environmental protection).

104. *See* D. EVENSON, *supra* note 44, at 14-15.

105. *See id*.

106. *See id*. at 22.

107. As the Law of the Environment would state in 1997:

> Whereas: Environmental actions in Cuba are sustained by the conceptions of Jose Marti regarding the relationship between human beings and nature and the rich traditions linking our history with a culture of nature.

Law No. 81, Prologue, 7 Official Gazette of the Republic of Cuba, Special Edition 47 (Jul. 11, 1997)[hereinafter Law 81].

108. Ley 33 (Ley De Protección Del Medio Ambiente y Del Uso Racional De Los Recursos Naturales), Gaceta Oficial (Feb. 12, 1981), *quoted in* F. Evenson, *supra* note 80, at n.119.

environmental protection in the United States is that it is tantamount to communism,[109] by which one supposes it is meant that public values are over-emphasized. When Fidel Castro went to Rio and mingled not only with the government delegations, but with the active volunteer grassroots and often oppositional environmental organizations as well, the revolutionary aspect of this movement was too obvious to ignore. It must have struck a chord. Castro embraced this environmental revolution, brought it home, and put it in the new constitution, unleashing a chain reaction that is still running its course.

IV. THE AGENCY, THE STRATEGY AND LAW 81

> While the majority welcomed the Law with pleasure and goodwill, I must also necessarily mention a minority view, which argued, more or less openly, that the Law was not constructed to fit our particular situation. The conceptual core of this line of thought was that the Law might well obstruct development by establishing such demanding standards for a country beleaguered by so many difficulties. … One proponent of this position commented that 'environmental protection is a game for the rich; our priority now is development, and later we will see.'[110]
>
> Orlando Rey Santos, CITMA, 1999

Cuba is no democracy in the western sense of the word,[111] but neither is it a monolith, a point illustrated by the development of Cuba's environmental law and policies in the 1990's. The tug-of-war among resource agencies and their constituencies over environmental policies and the substantive provisions that would carry them out, mirrored those seen daily in Washington, D.C., Brussels, and other capitals. The arguments were virtually the same, of pro-development versus pro-environment, and who would hold what

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109. The author keeps on a bulletin board in his office an aging bumper sticker from Kintzel Printing, Casper, Wyoming, which reads: "MINDLESS-MARXIST ECOLOGISTS, WORKING FOR RUSSIA. "

110. Santos, *supra* note 90, at 15.

111. Cuban legal scholars have shown little regard for capitalist democracy, which, in their view is a hypocritical system: a democracy for a minority of exploiters and a form of oppression of the majority. A former dean of the University of Havana's Law Faculty, Julio Fernandez Bulte, recently criticized representative democracy, which he asserted "was each day less representative, and it never was democratic". *SEE* D. EVENSON, *supra* note 44, at 24.

old turf and what new power within whatever compromises shook out. Ten years later, just where some ultimate powers bottom out has yet to be resolved. It is clear, however, that through the emergence of environmental law, the furniture of government has been rearranged.

A. CITMA

As one might expect with a planned state — and in significant contrast with the United States which responded to the need for environmental law on a largely ad hoc and piecemeal basis — Cuba came back from Rio and, with assistance from the United Nations and other international agencies, engaged in a comprehensive study to diagnose its problems, shortfalls, and "to-do's."[112] First among them was the creation of the long-awaited agency-in-charge.

In 1994, Cuba consolidated many of the functions of the defunct COMARNA and of more than a dozen separate environmental institutes and centers into one central authority, the Ministry of Science, Technology and the Environment (CITMA).[113] The new kid on the block, CITMA would be put into a roomful — more than twenty[114] — existing ministries. Many, such as the Ministry of Fisheries, had their own long-held turf; others, such as the Ministry of Sugar, had equally long-held power over specific activities that presented huge environmental problems. Add to this Tourism and Foreign Investment on whom Cuba's economic future would depend, the Ministry of Economy and Planning with nationwide zoning authority, and the inevitable OMB-like Ministry of Finance and Taxation, and it becomes clear that CITMA was playing with "big boys." While the environment was only one of CITMA's articulated missions, it was its dominant one and the one that would test its effectiveness.

CITMA was not left entirely to its own devices. The organic decree setting out its mandate and authority directed the agency to "steer and control the implementation" of environmental policy, the rational use of natural resources, and sustainable development — once again, code words from Rio.[115] It further directed the agency to "draw up and control the implementation" of regulatory programs,

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112. *See Workshop*, *supra* note 11, at 9-10.

113. *See id*. at 10; *see also* Santos, *supra* note 90, at 13.

114. *See Profile*, *supra* note 29, at 31 (listing 27 Cuban ministries and 5 separate institutes).

115. Agreement No. 2823 of the Executive Committee of the Council of Ministries of November 28, 1994 [hereinafter Agreement], *cited in Strategy*, *supra* note 45, at 6.

including the "adequate management of agricultural and industrial waste practices" and "clean production practices."[116] These mandates would clearly impinge on the activities of a range of sister ministries, with those for Industry and Agriculture at the top of the list. Going one step further, in language of authority often exercised in the United States by the Department of Justice and the Office of Management and Budget, CITMA was authorized to "settle the disagreements" among agencies over environmental issues by "making the relevant decisions" or passing them on to higher authority, such as the Council of Ministers.[117] On paper, this new agency looked as if it would be able to have its say.

Internally, CITMA organized its environmental responsibilities under a Deputy Minister for the Environment, and into two primary institutions.[118] The first was an Environmental Agency similar to the U.S. Environmental Protection Agency, with several scientific institutes and a center for natural areas (which in the United States fall under the Departments of Interior, Commerce and other agencies). At the core was a Center for Environmental Regulation and Inspection where the regulatory and enforcement power would lie. At the same time, CITMA created an Environmental Policy Directorate to develop future initiatives, similar to the U.S. Council on Environmental Quality. This small cadre of people, no more than a dozen and only one of whom was an attorney, would have an enormous effect in drafting, negotiating, enacting, and implementing the program to come.

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116. *Id*.

117. *See id.* This authority is also similar to that exercised by the U.S. President's Council on Environmental Quality. *See* 40 C.F.R. § 1504.1 (2000).

118. *See* Agreement, *supra* note 115, at 28-30. The descriptions of the Environmental Agency and Environmental Policy Directorate that follow were taken from this source.

B. The National Environmental Strategy

> [T]here have been mistakes and shortcomings, due mainly to insufficient environmental awareness, knowledge and education, the lack of a higher management demand, limited introduction and generalization of scientific and technological achievements, the still insufficient incorporation of the environmental dimension in the policies, development plans and programs and the absence of a sufficiently integrative and coherent juridical system.[119]
>
> CITMA, 1997

The next step was to articulate a set of environmental goals, to which the government through its various ministries would subscribe, and a process for carrying out its new "supervisory" responsibilities. The vehicle was a National Environmental Strategy, the development of which had been perking along with United Nations (U.N.) assistance since the early 1990's. CITMA's Policy Directorate personnel had taken a lead role in these initiatives; its attorney, through the U.N. and other institutions, had published several articles that contained the seeds of the Strategy and, ultimately, the new Law.[120] Formally adopted in 1997, the Strategy had gone through an elaborate process of inter-agency negotiation with other ministries and institutes.[121] A consciously aspirational document, it did two important things: it made the case for environmental protection, and initiated a continuing process of review.

The case was compelling and statistical. Category by category, in a fashion reminiscent of the early United States Council of Environmental Quality reports,[122] the data on soil degradation, water supply, waste treatment, deforestation, and so forth were presented with easy-to-assimilate graphs and charts.[123] The Strategy went on to propose a generalized list of solutions, as might be expected from

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119. *Strategy, supra* note 45, at 1.

120. *See* Roberto Acosta Moreno & Orlando Rey Santos, *Frameworks for Cooperation: From the Realm of the Possible to Action*, *in* INTER-AMERICAN DIALOGUE, 23-29 (on file with author).

121. *See Strategy, supra* note 45, at 11.

122. *See generally* President's Council on Environmental Quality, ENVIRONMENTAL QUALITY (1997).

123. *See Strategy, supra* note 45, at 9-18.

a collaboration with so many different agencies.[124] Nonetheless, the factual case was now made and the recommendations contained kernels of specificity such as, "increase liquid solid waste recycling in sugar cane."[125] As any environmental lawyer knows, good facts and prescriptive remedies are the *sine qua non* of enforceability. CITMA had set the stage.

As important as its data and recommendations, the Strategy also initiated an ongoing process of implementing strategies in which CITMA continues to play a lead role. Following the adoption of the National Strategy, CITMA personnel met with other ministries to help draft, approve, and begin the execution of subsequent "daughter strategies" for all government agencies.[126] These latter strategies became game plans for achieving much more specific environmental goals, some even as specific as the adoption of particular control processes at a particular facility,[127] and with timetables to match. At the same time, CITMA began to work with provisional and local governments on their own environmental strategies, expected to play a larger role in an anticipated, less-centralized Cuban government.[128] Essentially jawboning — and it could be said that nearly all environmental law, however expressed, is based on jawboning — the process of developing and regularly reviewing these strategies gave CITMA access to, and at least a say in, every part of Cuban government.

Related to these strategies and of perhaps equal importance is the participation by CITMA personnel with other agencies in the development of the Cuban Annual Plan, a process and a document similar to the United States Budget, and with an equally explicit statement of government activities and goals.[129] If things usually come down to money, in cash-short Cuba the allocation of scarce resources is an even more pivotal issue. The combination of CITMA participation in the articulation of agency objectives (through the strategies) and in their funding (through the budget process) results in a continuing process of heel-nipping and persuasion towards environmental goals.

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124. *See id*. at 27.
125. *Id*. at 13.
126. Interview with Dr. Terecita Borges, CITMA (Oct. 1998) (on file with author).
127. *See id*.
128. *See id*.
129. Interview with Dr. Raul Garnido Vazquez, CITMA (Oct. 1998) (on file with author).

This said, persuasion, even in a resource-rich country like the United States, only goes so far. CITMA would also need the authority of new law.

C. Law 81, the Law of the Environment

> Whereas: It is necessary to update the legal principles, objectives and basic concepts of Cuba's environmental policy, institutional framework and the tools for their implementation, the powers, functions and duties of the state agencies and bodies and, in general, the rights and obligations of natural and legal persons.[130]
>
> Law 81

In July 1997, Cuba enacted Law 81, entitled *The Law of the Environment*. Although grounded in the several halting steps towards environmental law noted earlier, Law 81 was itself revolutionary in its sweep, and in at least the apparent powers it would confer on CITMA.

The provisions of Law 81 had been incubating for more than two years, during which CITMA personnel presented and defended their proposals through rounds of negotiations with the traditional ministries and provincial and local governments. The initiative was led by the Environmental Policy Directorate, whose attorney had been making the case and outlining the provisions for a new law for nearly a decade.[131] Predictably, the law was criticized both as too strong ("environmental protection is a game for the rich; our priority now is development, and later we will see"),[132] and too weak ("[t]hey wanted to see, specifically inscribed, the administrative rules and penalties that we had left for the respective bodies to develop. . . ").[133]

At bottom there were questions of turf. "Another important line of discussion, put forth primarily by representatives of the agencies of the central administration, particularly those that had administered resources" was the "scope of the attributions and functions of CITMA"; they would say, and one can imagine not at all complimentarily, that this was not the Law of the Environment, but

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130. *See* Law 81, *supra* note 107.
131. *See* Moreno & Santos, *supra* note 120; *see also* Borges Interview, *supra* note 126.
132. Santos, *supra* note 90, at 15.
133. *Id*. at 15, 16.

"the Law of CITMA."[134] As CITMA's attorney would conclude with great tact a few years later, "the multi-faceted discussions, both the gentle ones and the not so gentle, contributed to the clarification" of the Law.[135]

The spadework paid off. When Law 81 was finally presented to the National Assembly, it passed unanimously, a result that might seem surprising for a law with the potential to tread on so many toes. It was strongly supported by representatives from rural districts who had heard from people back home,[136] as well as, doubtless, the Party.

Law 81 is, in the tradition of several Latin American countries, a comprehensive framework law. Unlike the separate programs of the U.S. and Europe, Law 81 has 14 titles and 163 articles that embrace air, water, waste, noise, toxic substances, historic preservation, biological diversity, national parks, forests, wildlife refuges, coastal zone management, education, research and technology, environmental impact assessment and planning, inspection, enforcement, and penalty regimes. The Law progresses in a logical march from general principles (e.g., the right to a healthy environment, the precautionary principle, the right to information and of participation in decision making);[137] to the authorities of CITMA and other government bodies;[138] to instruments of administration (e.g., land use planning, the environmental impact statement, economic instruments);[139] and to treatment of specific environmental issues (e.g., biological diversity, protected areas, waters and aquatic ecosystems, mineral and energy resources).[140] In this distribution and redistribution of authority, CITMA emerged with two new and powerful tools for environmental management and control.

The first power was the elevation of an environmental impact review process to the status of law,[141] managed by CITMA, that would apply both to individual projects and, in what has proven to be far more controversial in the United States and Europe, the plans and programs of other agencies.[142] In this process CITMA would not only approve the procedures of other agencies in somewhat the same

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134. *Id*. at 16.
135. *Id*.
136. Interview with Dr. Terecita Borges, CITMA (Oct. 1997) (on file with author).
137. *See* Law 81, *supra* note 107, at title I, ch. I.
138. *See id*. at title II.
139. *See id*. at title III.
140. *See id*. at title VI.
141. *See id*. at title III, ch. IV.
142. *See infra* text accompanying notes 154-65.

fashion as the United States Council of Environmental Quality, but the adequacy of the environmental analysis as well.[143]

The second power, new to CITMA and unknown in the United States, was the environmental license required for the activities of all other agencies[144] — including tourist development, mining plans, and of apparently even greater potential impact, land use planning and licenses for foreign investment in Cuba.[145] With this authority, one begins to understand the accusation that Law 81 was the "Law of CITMA."

How these authorities and the rearrangement of power within Cuban government that they imply will be realized rests, for the moment, in a state of "creative ambiguity." As the Director of Environmental Policy has observed: "Let us say simply that this [the ultimate question of authority] is not a matter that is totally resolved."[146] What is clear is that Law 81, on paper, is a strong and comprehensive piece of legislation. It is also a framework law, which means that in order to take hold it would need to be implemented by further laws and regulations. Who held what cards would to some extent be revealed in this next step, in which the tensions among competing agencies and interests would surface once again. For the next three years, CITMA would move into a largely lawmaking mode — developing, proposing, and enacting three laws for the issues it considered most important and achievable: environmental impact assessment, coastal zone management, and biological diversity.

V. ENVIRONMENTAL IMPACT ANALYSIS

> The National Environmental Policy Act of 1969 is the Sherman Act of environmental law, and the most famous statute of its kind on the planet.[147]
>
> Professor William Rodgers, Jr.

> If Congress had appreciated what the law [The National Environmental Policy Act] would do, it

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143. *See* Law 81, *supra* note 107, at title III, ch. IV, art. 27(c).
144. *See id.* at title III, ch. III, "Environmental License."
145. *See infra* text accompanying notes 170-78, 258-82.
146. Santos, *supra* note 90, at 16.
147. WILLIAM H. RODGERS, Jr., ENVIRONMENTAL LAW 801 (2d ed. 1994).

> would not have passed. They would have seen it as screwing public works ….[148]
>
> Richard Liroff

Environmental impact assessment is the seminal concept in modern environmental law. The United States started here in the 1970's;[149] Cuba started here in the 1990's.[150] Following the adoption of Law 81, which contained authorization for more than a dozen new programs, Cuba chose to make impact analysis its first order of business.

It was an obvious choice, if for no other reason than evaluating the effects of a proposal before acting on it is so obviously, unarguably sensible. These evaluations, due to their comprehensive nature, play a particularly important role in countries that do not have the resources to expend on separate, finely-calibrated pollution control and management programs. The thought of exporting, for example, the Clean Air Act/National Ambient Air Quality Standards/State Implementation Plan/Prevention of Significant Deterioration program to Cuba — or to any other country for that matter — is daunting.[151] Even the United States, with resources to burn and the highest levels of science and technology in the world, can barely make rational regulatory decisions given the complexity of the tasks involved.[152] Many developing countries rely on impact analysis to provide these controls on an ad-hoc, "best professional judgement" basis. Thus, while the presence of the Clean Water Act, Endangered Species Act, et. al. in the United States relegates NEPA

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148. RICHARD A. LIROFF, A NATIONAL POLICY FOR THE ENVIRONMENT 35 (1976).

149. *See* The National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321, 4332, 4344, 4371 (1998) [NEPA]; *see also* William L. Andreen, *Environmental Law and International Assistance: The Challenge of Strengthening Environmental law in the Developing World*, 25 COLUM. J. ENVTL. L. 17, 38 (discussing the evolution and importance of environmental impact analysis in the U.S. and abroad); FEDERICO IRIBARREN, EVALUATION OF ENVIRONMENTAL IMPACT: ITS LEGAL FOCUS (1997)(discussing the spread of environmental impact assessment programs to Latin America).

150. CITMA Resolution No. 168/95 provided the first guidance for environmental impact analysis in Cuba.

151. A former Administrator of the United States Environmental Protection Agency once quipped that only two people in his Agency understood the Clean Air Act, which was such valuable knowledge that he would not let them get on the elevator at the same time. Remarks of William Ruckleshaus to the Environmental Law Conference, American Bar Association/Environmental Law Institute (1972).

152. For the continuing controversy over United States environmental regulatory decisions of great complexity, *see* American Trucking Ass'ns. v. EPA, 175 F.3d 1027 (D.C. Cir. 1999) (ozone and particulate standards); National Resources Defense Council v. EPA, 824 F.2d 1146 (D.C. Cir. 1987) (hazardous air quality standards).

to an informational role,[153] in other countries the impact statements and their conditions become the environmental permits, enforceable — to the uncertain extent, of course, that anything may be enforceable in a developing country — as law.

In 1995, with only slim statutory support, the newly-created CITMA issued a regulation requiring impact analysis for major projects.[154] The regulation contained the bare-bones elements of impact review but fell short in several critical regards, such as the consideration of alternatives and of cumulative impacts. These shortfalls were shared by, *inter alia*, the European Union and other Western systems. The Regulation also failed for its want of authority over the actions of other agencies. Three years later, Law 81 provided the authority CITMA needed. CITMA now proceeded to develop new impact analysis regulations[155] and, in so doing, wrestled with many of the same questions that the United States, Europe, and other jurisdictions have faced with impact assessment. A few of these questions, and their resolution, merit particular attention.

A. What and When

Although the questions "what" and "when" produce distinctly different answers in common English usage, in the world of impact analysis they are closely related and together define the scope of the process. All will agree that mere ideas are too premature to trigger an impact analysis; all will agree as well that specific projects proposed for set locations should require one. The gray zone lies along the range of decision-making in between, and in particular those government policies, programs, and management plans that set the stage for individual actions such as timber harvests, highway projects, and power plants. Speaking generally, it is close to a truism that the earlier impact analysis is provided and the more broadly the proposal is perceived, the more effective the analysis will be.[156] Impacts can be avoided; improvements can be made. Conversely, the later in decision-making the analysis is conducted, the less

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153. *See* Robertson v. Methow Valley Citizens Council, 490 U.S. 332 (1989).

154. *See* Resolution No. 168/95 *supra* note 150; *see also Strategy*, *supra* note 45, at 6 (noting the agency's authority to draw up and implement regulations).

155. *See* Regulations of the Environmental Impact Evaluation Process, CITMA Resolution No. 77/99 (July 28, 1999), 48 Gaceta Oficial dela Republica De Cuba 778 (Aug. 6, 1999).

156. For these reasons, the U.S. President's Council on Environmental Quality regulations call for early analysis (*see* 40 C.F.R. § 1502.4 (2000)) on a broad scale of actions and proposals (*see* 40 C.F.R. §1502.5 (2000)).

effective it will be. The big picture is already set; the analysis treats only the details. For this reason, environmentalists support early and broad analysis. For the same reason, developers and development agencies oppose it.[157]

CITMA's regulations begin by listing classes of projects that will in all cases require analysis.[158] This is, *inter alia*, the European approach[159] and it stands in contrast to the system in the United States, in which the need for a statement on a particular activity is decided on an ad hoc, case-by-case basis. The regulations also include, however, other projects that CITMA determines will have significant effects, [160] re-introducing the same case-by-case scrutiny for close cases seen in the United States.

The regulations explicitly require analysis of government policies and programs, either prospective or on-going,[161] and further require the consideration of all phases of a particular proposal together, from the start.[162] These "programmatic" and "cumulative" impact requirements arose from U.S. case law in the 1970's[163] and can be very big medicine.[164] Comprehensive reviews of transportation programs, for example, as opposed to reviewing the impacts of specific road projects, go to the heart of their impacts (e.g., congestion, pollution) and to more sustainable solutions (e.g., rapid transit systems).[165] The absence of these requirements in European Union impact assessment law has been identified as a severe shortcoming, and is the subject of regular hard-fought proposals to bring Europe on board with broader impact analysis earlier in the game.[166]

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157. For discussions of these issues of scope and timing, see Scientists' Inst. for Pub. Info. V. Atomic Energy Comm'n. 481 F.2d (D.C. Cir. 1973) and Kleppe v. Sierra Club, 427 U.S. 390 (1976).

158. *See* Resolution No. 77/99, *supra* note 155, at art. 5. So much high-impact activity in the United States is at least federally assisted or permitted — with the important exception of local land-use decisions — that, as a practical matter, most major private projects receive NEPA review. *See generally* 42 U.S.C. § 4332(2)(c) (2000) (noting that NEPA is restricted to major federal actions).

159. *See* E.U. Directive 85/337, O.J (L175) 40, art. 4.

160. *See* Resolution No. 77/99, *supra* note 155, at art. 5z.

161. *See Strategy*, *supra* note 45, at 6.

162. *See* Resolution No. 77/99, *supra* note 155, at art. 15 (including a description of a prospect from start to closure and a description of impacts in the different steps of a project).

163. *See* RODGERS, *supra* note 147, at 801.

164. *See* CHARLES F. WILKERSON, CROSSING THE NEXT MERIDIAN 93 (1992)(discussing the effect of NEPA on federal grazing programs); *see also* CEQ, ENVIRONMENTAL QUALITY TWENTIETH ANNUAL REPORT 27-30 (1991)(discussing NEPA's effects on forest programs).

165. The same can be said for reviews of all stages of, for example, energy and mineral development — from exploration to waste disposal and closure.

166. *See* William R. Sheate, *The Environmental Impact Assessment Amendment Directive 97/11/EC — A Small Step Forward?*, EUR. ENVTL. L. REV., Aug.-Sept. 1997, at 235, 238-39, 243

That Cuba would be willing to go farther than the European Union on this issue makes its own statement.

Cuban governance raises two additional problems with the scope and timing of impact review relating to land use planning and foreign investment.

1. Planning and Micro-localization

Starting in the 1970's, Cuba began a system of national planning that attempted to make decisions over its land base that were more rational than those that had previously committed over half of the island to sugar. This process is managed by the Ministry of Planning and, in theory, zoning plans exist for all provinces.[167] Many are only marginally current, however, and none were prepared with an eye to environmental impacts.[168] All projects in Cuba are subject to Planning Ministry review and approval per the contents of these zoning plans, a process called "micro-localization."[169]

Resolution 77/99 requires applicants for environmental licenses to have already received micro-localization approvals.[170] Once these decisions are made, however, they have the practical effect of fixing the location of activities that can have considerable environmental impact, such as hotels, roads, and mining operations. Indeed, location is often the central issue in environmental review. The relative timing of environmental review and micro-localization decisions remains an open and important question.[171]

2. Foreign Investment Licensing

Foreign investment presents an even more preliminary and fundamental decision-point as the development with the most

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(identifying the failure to require "strategic environmental assessment" as a major shortcoming in EU impact analysis).

167. *See* Interview with Orlando Rey Santos, CITMA (Oct. 1998) (on file with author).

168. *See id*.

169. *See id*.

170. Resolution No. 77/99, *supra* note 155, at art. 15.

171. Ideally, of course, Cuba's land use plans form the basis for more proactive and comprehensive decision-making than is possible under NEPA, which reacts to specific proposals. Several states in the United States take a similar, comprehensive approach. *See* THOMAS G. PELHAM, STATE LAND-USE PLANNING AND REGULATION 151 (1979); *see generally* HENRY L. DIAMOND & PATRICK F. NOONAN, LAND USE IN AMERICA (1996)(describing state land use programs of Vermont, Oregon and Florida). One way to integrate EIA in these systems, and an approach that has been adapted in Chile for example, is to require detailed environmental review of the plans themselves, following which compliance with the plan is deemed to satisfy environmental requirements. *See* Ricardo Katz, Presentation at the Workshop on Environmental Impact Evaluation, Havana, Cuba (Oct. 29, 1999).

potential to change the Cuban landscape. The major investments today, and for at least the short-term future, will relate to tourism and mineral development — activities well known for adverse impacts, and with their own histories of bad management throughout the Caribbean and Latin America.

The first step for foreign investment in Cuba is a license from the Ministry of Foreign Investment and Economic Cooperation, at which the basic contours of the deal — from property rights, to joint-ventures, to percentages, to special requirements for the use of Cuban labor and technology — are set.[172] Applications are circulated to all ministries[173] including CITMA; final decisions are referred to the Council of Ministries.[174] It is obvious that this process, and the assumptions within it on appropriate locations and technologies for a proposed enterprise, could eclipse subsequent environmental review.

Anticipating this problem, Cuba's Law of Foreign Investment provides a substantive standard for environmental protection and a process driven by CITMA for carrying it out. The standard for foreign investment is that it be made "in the context of sustainable development" and executed with care for the "protection of the environment and the rational use of natural resources."[175] The process calls for CITMA to determine the need for an environmental impact analysis during the coordination stage, and the considerations necessary for an environmental license.[176] CITMA is further authorized to prescribe those measures it considers necessary for possible damages and environmental risks.[177]

These authorities grant environmental impact review and CITMA a lead role in foreign investment decisions. Whether the agency has the political strength to play this role is another question, and one that cannot be answered on the record to date. Set as they are in law, however, these environmental standards and requirements have the potential to take on a life of their own.[178]

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172. Ley 77, Ley Para La Inversión Extranjera [Law 77, Foreign Investment Law], *reprinted in* LA Economic CUBANA: REFORMAS ESTRUCTURALES Y DESEMPENO EN Los NOVENTA (Comision Economica Para America Latina y el Caribe, Nacione, Unidas 1997). Foreign investments may take three forms: (a) joint ventures, (b) contacts, and (c) enterprises fully supported by foreign capital. *See id.* at art. 12.

173. *See id*. at arts. 20-25.

174. *See id*.

175. *Id*. at art. 54.

176. *See id*. at art. 55.

177. *See id*. at art. 56.

178. *See supra* text accompanying notes 115-29, 130-36; *see also* Stichting Greenpeace Council (Greenpeace International) and Others v. EC Commission, 3 C.M.L.R. 1 (1998), *available*

B. Who

There is no good answer to the question, what entity should prepare the environmental impact analysis? In the end, one is forced to choose between insiders and outsiders, which can often mean tradeoffs among conflicting goals of (1) expertise, (2) impartiality, and (3) impact on the decision itself.

One option is to leave the process to the mission agencies, as does the United States, where the U.S. Army Corps of Engineers analyzes the impacts of its dams and navigation canals, the Department of Transportation and state highway agencies the impacts of their on-going construction projects, and the Forest Service its timber harvests and management plans. The obvious problem with this system is that the agencies have long-standing biases in favor of programs which are their very reasons to exist.[179] Few agencies within memory have described the consequences of their proposals as anything but highly beneficial and with more than minor adverse environmental impacts. The impartiality factor is, to put the matter charitably, low. On the other hand, these agencies possess undeniable expertise in what they are doing, and are forced to acquire even more in order to exercise the requirements of NEPA. The Department of Transportation hires wetland biologists; the Forest Service hires ornithologists; there starts a process of greening from within.[180] Perhaps the strongest advantage of agency-driven impact assessments is the impact they may have on the decision. While on the one hand, agency environmental personnel are easier to stifle than those of other institutions; on the other hand, depending on the personnel and the institutional structure, they may have more access to and influence over the decision itself. If, as the United States regulations state, the purpose of environmental analysis is not

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in 1998 WL 1043035 (challenging European Union funding for Spanish development on failures in environmental review.)

179. *See* the statement of the Office of Mining Operations for the U.S. Geological Survey on the description of its mining activities in the NEPA process:

> When the Geological Survey has the lead in preparing environmental statements, inflammatory words such as disturbed, devastated, defiled, ravaged, gouged, scarred and destroyed should not be used. These are the words used by the Sierra Club, Friends of the Earth, environmentalists, homosexuals, ecologists and other ideological eunuchs opposed to developing mineral resources.

Memorandum of Andrew V. Bailey, Chief, Branch of Mining Operations, U.S. Geological Survey, U.S. Department of the Interior, Oct. 8, 1976.

180. For a discussion of the "greening from within" effect of NEPA on federal agencies, *see* LYNTON K. CALDWELL, SCIENCE AND THE NATIONAL ENVIRONMENTAL POLICY ACT: REDIRECTING POLICY THROUGH PROCEDURAL REFORM 58-69 (1982).

better paperwork but better decisions,[181] this factor cannot be ignored.

Another option is to have the impact statement prepared by an independent environmental agency, such as the EPA or CITMA. This approach maximizes objectivity, but it runs the risk of producing outside, largely ignored — and certainly resented — documents to the mission decision-making agency. It is also highly resource intensive, requiring a large environmental staff to, in effect, second-guess the expertise of the line agencies, without which capacity serious project changes cannot be proposed or defended. Many countries simply do not have the luxury of going this second route, and very few have.

Another option, exercised both in Europe and in many Latin American countries, is to leave the statement to the project applicant in those many cases where the activity, such as a new industry or a wetland marina, is essentially private.[182] These systems bow more to the expediency of getting the job done in the least inconvenient manner than they do to any of the goals noted above.[183] Government personnel may not be impartial towards their projects, but they at least do not have their individual incomes at stake with the approval of each proposal.[184] There is, further, no inherent institutional expertise in the private sector which may not build these plants or marinas with sufficient frequency to know, or care about, their environmental effects. The perpetuation of applicant-driven systems, in spite of their obvious biases and defects, is testimony to the distance independent environmental analysis has yet to travel on the world stage.

A last option to which many nations are coming to resort, including the United States, is the use of outside consultants. Environmental engineering consultant firms abound in every major city in the United States. These firms conduct the actual preparation of impact statements for everything from new highway construction to new industrial facilities. Long on expertise (for this is what they do for a living), they are short on impact, and may be equally short on impartiality. In many cases, highway construction for example,

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181. *See* Council on Environmental Quality Regulations, 40 C.F.R. 1500.1(c) (2000) ("Ultimately, of course, it is not better documents but better decisions that count.").

182. *See generally* EU Directive 85/175.

183. *See* Andreen, *supra* note 149, at 48 (criticizing the applicant driven processes as "flawed").

184. *See generally* Mark Squillace, *An American Perspective on Environmental Impact Assessment in Australia*, 20 COLUM. J. ENVTL. L. 43 (1995)(suggesting that conflicts facing the agency are far less significant then those facing private proponents).

the construction contracts worth tens of millions of dollars will go to these same consulting firms once the impact statement is approved.[185] United States regulations attempt to cure this influence by requiring a statement of all consultants disavowing financial interest in the project, as well as independent federal agency review of the statements prepared.[186] In practice, both safeguards prove to be more fig leaves than substance.[187] In fact, the United States system relies on other checks and balances, discussed below, to assure at least a measure of objectivity.

Cuba has sorted out this conflict of goals and options with a system of consultants-cum-safeguards, which may or may not work. The choice is rational, if not inevitable. Cuban mission agencies have little expertise in environmental issues, and even fewer resources to obtain it. They are going to have to look to the outside. On the other hand, Cuba has significant wealth in scientists and in scientific expertise, a ready pool for consultant work. The Cuban solution is to allow consultant preparation of the environmental analysis,[188] and require payment of the consultant by the applicant.[189] The consultants for any given project, however, are drawn ostensibly at random from a list of approved consultants, pre-screened for expertise by CITMA.[190] This qualification and selection process is designed to secure impartiality. Its flaws include the ineludible fact that, if the applicant is paying, it will want approval and it will have the leverage of employing a favorable consultant in many ways in the future. Working in Cuba for the Sol Melia hotel chain, for example, is worth its weight in gold.[191] The Cuban system is also flawed at the moment by the paucity of approved consulting firms; one central firm has cornered the lion's share of the assessment work

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185. *See* Vicki Ferstel, *Lawsuits feared over change in request for consultant bids*, THE ADVOCATE, Baton Rouge, LA, Mar. 17, 1993, at B-10. ("Last month, the airport authority had approved a request form stating the successful consultant would handle feasibility and site selection studies, environmental assessment, master planning, design and construction management, overall project administration, agency coordination and grant applications, and tenant coordination and development.")

186. *See* 40 C.F.R. §§ 1506.5(a), (c) (2000).

187. For a description of the abuses of the consultant process, *see* Citizens Against Burlington v. Busey, 938 F.2d 190 (D.C. Cir. 1991); *see also* Sierra Club v. Sigler, 695 F.2d 957 (5th Cir. 1983).

188. *See* Resolution No. 77/99, art. 38.

189. *See id*. at art. 26.

190. *See id*. at art. 39-51.

191. *See* Andreen, *supra* note 149, at 48, n.154 ("the consultant, after all, does not want to lose a client by failing to produce a favorable report on the proposal.").

to date.[192] In a system as politicized as that in Cuba, such a sole-source firm has to be subject to the same pressures that are faced by an agency itself.

C. Alternatives

Alternatives are the heart of the environmental impact statement process.[193] Few actions in life are undertaken without the consideration of alternatives. Actions whose impacts might appear to be unacceptable (e.g., running in the rain), might appear quite acceptable given certain alternatives (e.g., either run or miss the bus). At the bottom of every major action affecting the environment, from the use of pesticides to the construction of a new pier for tourism, is the question: are the impacts acceptable … compared to what? If Cuba, the United States, or any other country is going to put itself to the expense, delay, and difficulty of environmental impact analysis, this analysis will have to consider alternative locations, modes of access, technologies, sources of materials, disposal practices, and other options at play.

As central as they are to environmental decision-making, the consideration of alternatives is easily the most resisted feature of impact analysis by the development community.[194] To a project applicant or agency proponent, this is *its* project, not yours. If someone else wants to build on an upland, fine; *this* project is going right down by the sea. The inquiry into alternatives is intrusive; it challenges basic assumptions about feasibility and engineering; it threatens profit margins, investment loans and conditional commitments; it requires hassles and delays to accommodate new questions; it brings in the press, the neighbors, and no end of armchair quarterbacking; and, at bottom, it is downright insulting. Nobody on this earth enjoys being told that, whatever he or she is doing, there is a better way. Most NEPA litigation and environmental activism short of litigation in the United States revolves around, explicitly or implicitly, seeking an alternative way.

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192. *See* F. Evenson, *supra* note 80, at n.232 (stating that one firm has prepared "95 percent of all EIA's").

193. *See* 40 C.F.R. § 1502.14 (2000) ("This section [Alternatives] is at the heart of the environmental impact statement.").

194. *See* the proposals to revise the Council on Environmental Quality Regulations by the Reagan Administration, *in EPA Criticizes NEPA Regulations, Seeks Changes in Several Provisions*," 0013-9211/82 Env't Rep. (BNA), at 524-25 ("the regulations err in stating that the presentation of alternatives is 'the heart' of NEPA …. Alternative analysis may be useful, but it is not the central feature of the Act.").

Many countries, indeed most, resolve this conflict in favor of development interests. Alternatives are made an optional consideration for the applicant or, if mandatory, a requirement only to the extent that the applicant state why certain alternatives it considered were not adopted.[195] This single concession cripples the effect of impact analysis. The strength of the opposition to alternatives is so pronounced, however, that the European Union only recently, after two decades of failure, changed its rules to require their fuller consideration.[196] It would have been easy to imagine that cash-short Cuba would have taken the path of less resistance here.

It didn't. Instead, Resolution No. 77/99 makes explicit that alternatives, including alternative locations, be identified by the consultant in its application for a CITMA license.[197] The statement itself, if then required, is to include the description of "distinct," "feasible" alternative projects and their relative-environmental impacts, including the alternative of not acting at all; from these, the identification of the alternative "most favorable to the environment" is also required.[198] CITMA's review of the adequacy of the statement is based, in turn, on the availability of less harmful alternatives, both to central project features and to provisions for mitigation.[199] In so doing, CITMA has allied itself with United States jurisprudence and practice, and given its system a chance for meaningful effect.

D. Review

Given the fact that impact assessment processes are inevitably tainted by the preconceptions of those who conduct the assessments, the final challenge is to offset these preconceptions in an institutional way.[200] This challenge is often misunderstood by those who are developing and participating in EIA systems as an affront to their integrity. We are all in our own minds balanced, reasonable people, possessing considerable expertise in doing what we propose to do. It is no small trick to persuade individuals, private companies, and

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195. *See* EU Directive 85/337, *supra* note 159.
196. *See* Sheate, *supra* note 166, at 239.
197. *See* Resolution No. 77/99, *supra* note 155, at art. 15.
198. *See id.* at art. 25.
199. *See id.* at art. 30, c, d.
200. *See* ALAN GILPIN, ENVIRONMENTAL IMPACT ASSESSMENT (EIA): CUTTING EDGE FOR THE TWENTY-FIRST CENTURY 22-23 (1995)(relying on procedural review to correct biases in statement preparation).

government agencies — all of whom have the public welfare in mind — of the need for checks and balances.

In the United States, a process driven by proponent agencies begs for independent review, and the integrity of the NEPA system indeed depends on several external mechanisms that act as an exo-skeleton for a process that is inherently biased at the core.[201] The first of these is public participation, solicited from the start with notices of meetings to scope the parameters of a statement[202] and continuing through public comment on the draft statement,[203] required responses to public comment,[204] a final statement, and,[205] ultimately, judicial review.[206] A second supporting process is the review by expert agencies.[207] Their views and opinions, while not dispositive, may carry considerable weight both within the federal family and, implicitly but very much present in the wings, in the evidence it provides for the media and citizen-suit litigation.[208] This review is carried to the next level by the separate statutory requirement that the EPA review and rate both the adequacy of an environmental statement and the proposal itself.[209] Projects found objectionable by EPA or other agencies may be referred to the President's Council on Environmental Quality which, although to the distress of some does not possess a veto power, has the authority to convene hearings, mediate, jawbone, and refer to the President for resolution projects with major unresolved environmental conflicts.[210]

In all, the U.S. process works indirectly by its transparency and by the intervention of others to induce the selection of better alternatives, mitigating measures, and lessened adverse effects. Very few projects are stopped under NEPA;[211] many however, are modified, — some right from the start in unseen ways, and some after long and open contest — in favor of environmental protection.

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201. *See* Andreen, *supra* note 149, at 50-55.

202. *See* 40 C.F.R. § 1503.1(4) (2000).

203. *See id*. at § 1502.9(a).

204. *See id*. at § 1502.9(b).

205. *See id*. at § 1503.4(a).

206. "Judicial review, therefore, is more responsible than any other factor for improving the quality of the assessment process in the United States, and keeping mission-oriented agencies on their toes." *See* Andreen, *supra* note 182, at 54.

207. *See* 40 C.F.R. § 1502.19(a) (2000).

208. *See* Fritiofson v. Alexander, 592 F.Supp. 120 (S.D. Tex. 1984).

209. *See* 42 U.S.C. § 7609 (2000).

210. *See* Council on Environmental Quality Regulations, 40 C.F.R. § 1504.1(a) (2000).

211. *See* COUNCIL ON ENVIRONMENTAL QUALITY, ENVIRONMENTAL QUALITY: THE WORLD WIDE WEB 355 (1997)(identifying 102 cases filed but only 2 injunctions under NEPA).

In Resolution 77/99, Cuba leaves itself the room to adopt several of the mechanisms that have reinforced impact analysis in the United States. It has not yet, on the other hand, committed itself to them in ways that assure either their perpetuation or effect. Resolution 77/99 charges CITMA with the adoption of necessary measures for considering the interests and concerns of the public in general, and, more specificially, those in the project area.[212] The application for license must document the public information and consultation conducted by the applicant, in compliance with these measures;[213] the subsequent impact statement is to include the results of consultation with local authorities and the public.[214] Lastly, provision is made for the applicant to appeal environmental decisions within CITMA, much as within a United States agency.[215]

Here the similarities end. There is no public participation in the all-important process of project scoping, which defines the review to follow.[216] There is no explicit provision for interagency comment, or for public comment, either on the statement or on a proposed licensing decision. There is no right of the general public to appeal within CITMA either the absence of an environmental analysis, defective analysis licensing conditions, or the licensing decision itself. CITMA may yet promulgate these rights. So far, Resolution 77/99 does not get there.[217] It could be argued that, in these regards, the Resolution fails to implement either Article 27 of the Constitution[218] or Article 4 of the Law of the Environment.[219]

These criticisms noted, it should also be said that, apart from the United States, such public rights are far from the norm. They are not

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212. *See* Resolution No. 77/99, *supra* note 155, at art. 9(d).

213. *See id.* at art. 15.

214. *See id.* at art. 25.

215. *See id.* at art. 33.

216. *See supra* text accompanying note 126.

217. The Director of CITMA's Environmental Policy Directorate has recognized these shortcomings:

> [W]e must implement an effective System of Environmental Information, today in infancy, and guarantee the mechanisms for public access to that information. It is necessary also to establish mechanisms for citizen consultation, especially for the relevant processes of Environmental Impact Evaluation. The mechanisms of the Popular Power should be the base, but the connections between the two systems have not yet been developed.

Santos, *supra* note 90 at 18.

218. *See supra* text accompanying note 143.

219. *See* Law 81, *supra* note 107, at art. 4(*l*) ("every natural or juridical person, as authorized by law, must have adequate and sufficient access to administrative or judicial means to demand compliance with this Law and provisions complementary to this law"); *see also id.* at art. 4(m) ("the participation of the community, through effective participation in decision-making … is essential to attain the goals of this Law").

found in European Union environmental impact assessment regulations or the laws of many Latin American countries.[220] The U.S. provisions for public participation, further, were years in the making, in fits and starts; there is quite good reason to believe that they would be not nearly so strong were the U.S. to be starting, de novo, in the more conservative climate of today.[221] Cuba is clearly feeling its way here, and perhaps with good reason. Supplementary, implementing regulations on public participation will certainly be easier for the rest of Cuban government to swallow once the initial shocks of the system have been absorbed, and the process is under way. As with many Latin countries, and indeed many civil law jurisdictions, public involvement in government decisionmaking is a new phenomenon. The most sound observation that can be made about this aspect of Cuba's impact statement process is that CITMA is approaching the question with caution, and that it has not yet answered it fully.

VI. COASTAL ZONE MANAGEMENT

> Formed by the islands of Cuba, Youth and another 1,600 small islands and cays, the Cuban archipelago features some 1,200 kilometers of white sand beaches and is rich in coral reefs and other natural resources that have become important tourist attractions.[222]
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> Dalia Acosta, 1995

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220. *See* IRIBARREN, *supra* note 149 at 104-06. The European Union is just now coming to grips with these issues of public participation and review in the 1998 Aarhus Convention. *See* Press Release, "Europe has adopted Convention on Citizens Environmental Rights," June 25, 1998, <http://www.memodk/aarhus-conference/press>.

221. *See* Oliver A. Houck, *The Secret Opinions of the United States Supreme Court on Leading Cases in Environmental Law, Never Before Published!*, 65 U. COLO. L. REV. 459, 463-476 (1994) (projecting the Court's treatment of early NEPA jurisprudence were it to arise today).

222. Acosta, *supra* note 71.

> In 1995, a total of 34 Cuban environmental non-governmental organizations stressed their concern over possible damage to be expected from the development of tourism, in the belief that the flow of foreign capital into this sector could be dangerous to the coastal ecosystems.[223]
>
> Dalia Acosta, 1997

The coastal zone is likely to be Cuba's major test of environmental responsibility. It is a major test for any country and one that many countries do not bother to sit for, much less pass. The world's coastal zones are some of the most biologically rich eco-regions on earth, harboring seabed grasses, kelp forests, oyster beds, coral reefs, shellfish flats, tidal pools, sea caves and ledges, beaches, dune grasses, sea oats, cheniers, mangroves, salt marshes, intermediate and freshwater marshes, bays, keys, estuaries, river mouths, hardwood swamps and similar universes which support more than a quarter of the world's primary plant production,[224] ninety percent of its seafood,[225] nearly all of its migratory waterfowl,[226] and provide enormous, additional services in pollution control, flood control and the buffering of coastal storms at virtually no cost. The case can be made that these resources are the greatest bargain on earth.[227]

The case can also be made that, at current odds, they do not stand a chance of survival. Fully half of the world's population lives within 50 miles of saltwater, and the numbers are growing.[228] By the year 2020, the coastal zones alone will hold the same number of people as on the entire planet only thirty years before.[229] China's coastal population is increasing by ten percent or more per year, although the national growth rate is only 1.2 %.[230] The population of

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223. Dalia Acosta, *The Polluter Will Pay*, INTER PRESS SERVICE, 1997, *available in* 1997 WL 7076169.

224. Peter Weber, *It Comes Down to the Coasts*, WORLD WATCH, March / April 1994, at 22.

225. *See id*. at 21.

226. *See* ENVIRONMENTAL HEALTH CENTER, COASTAL CHALLENGES: A GUIDE TO COASTAL AND MARINE ISSUES (1998), at 15 ("Gulf of Mexico coastal wetlands serve as essential habitat for 75 percent of U.S. migrating waterfowl.").

227. For a calculation estimating the economic value of the Louisiana coastal zone in pollution control, flood control, and fish and wildlife production at $10.45 billion in annual value and a capitalized value of $210 billion, see Oliver A. Houck, *Land Loss in Coastal Louisiana: Causes, Consequences and Remedies*, 58 TUL. L. REV. 3, 74-92 (1983).

228. *See* Weber, *supra* note 224, at 21.

229. *See id*.

230. *See id*. at 23.

countries bordering the Mediterranean Sea is projected to rise from 212 million, fifty years ago, to 547 million in the next twenty years.[231] Within two decades, the percentage of Americans living near the sea will rise from fifty-plus percent to seventy-five percent.[232] To these permanent residents must be added the coastal tourist boom, the major propellant of $1.9 trillion spent on tourism worldwide, one-tenth of the global economic output and one of its fastest growing industries.[233] The small island of Malta will host nearly a million residents during tourist season.[234] Nags Head, North Carolina, Fort Lauderdale, Florida, Biloxi, Mississippi and a hundred coastal resorts like them make a similar leap every spring.

This is the pace of lemmings. It is almost the definition of unsustainable growth. It would be difficult to accommodate even with an abundance of capital expenditure, zoning controls and political will, not found even in the United States where, despite a variety of management programs, coastal resources are in decline,[235] entire land masses are disappearing,[236] and contamination has created "dead zones" of 8,000 square miles and more at the mouths of major rivers.[237]

Without adequate law or political will, most coastal cities of the world build right down to the beach, bulldoze the vegetation, drain and fill the wetlands, and dump raw sewage into the sea where it mixes with eroded sediments, algae, oil spills, bilge water, and untreated industrial wastes.[238] The natural systems die.[239] There is no

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231. *See Cleaning up the Mediterranean: The Coveted Coast*, THE ECONOMIST, Dec. 21, 1991, *available in* 1991 WL 4964030 [hereinafter *Cleaning Up*].

232. *See* S. JEFFRESS WILLIAMS, ET AL., U.S. GEOLOGICAL SURVEY, COASTS IN CRISES 2 (Circular 1075, 1990) (reporting that coastal areas bordering the United States, as of 1990, had population densities five times the national average).

233. *See* Weber, *supra* note 224, at 21.

234. *See Cleaning Up*, *supra* note 231, at 2.

235. *See* James R. Chambers, *Coastal Degradation and Fish Population Losses*, in NATIONAL SYMPOSIUM ON FISH HABITAT CONSERVATION, Baltimore, MD (1991) (describing declines in fisheries productivity and habitat).

236. Between 1930 and 1990, the Mississippi Deltaic plain lost over 680,000 acres of land. *See* SHEA PENLAND ET AL., COASTAL STUDIES INSTITUTE, LA. ST. U., NATURAL AND HUMAN CAUSES OF COASTAL LAND LOSS IN LOUISIANA (1996). This loss rate rose to 47 square miles per year during the 1980's. *See* Houck, *supra* note 225, at 11.

237. *See* Mark Schlefstein, *Dead Zone in Gulf Biggest in Decade*, TIMES PICAYUNE, July 28, 1995, at B1 (describing a "dead zone" of anaerobic water of 7,032 square miles at the mouth of the Mississippi River).

238. *See 50 Tons of Dead Fish Wash Upon Rio Beaches*, REUTERS, Apr. 6, 2000:

> Fifty tons of dead fish washed onto the picturesque beaches of Rio de Janeiro this week, the latest in a series of environmental mishaps that are spoiling the city's natural beauty, officials said on Wednesday. Thousands of smelly sardines coated beaches in the northern part of the city, which hosted the environmental Earth Summit in 1992.... The Earth Summit's

life because there is no oxygen, at the mouth of the Mississippi River.[240] The Rhine River, with ten times the population density of the Mississippi dumps ten times the volume of oxygen-depleting nutrients into the sea.[241] Global fisheries have collapsed and are not recovering.[242] Coral reefs are plundered, smothered and going fast.[243] Species endangerment rises.[244] Hurricane damages rise.[245] This is not only the *pace* of lemmings; it is the *fate* of lemmings. However, few countries of the world have met the challenge of coastal management with any commitment or success.

Which brings us to Cuba, whose primary advantage is that late 20th century population booms, industrial-strength tourism, and high-grade industrial contamination passed it by. To be sure, its major coastal cities discharge directly into the ocean, and only seventeen percent of sewage nationwide currently receives even primary treatment.[246] Indeed, lumping all 2,355 Cuban agricultural, industrial and domestic waste sources together, some fifty percent have malfunctioning treatment systems and forty percent have no treatment systems at all.[247] Adding serious agricultural erosion[248] to these loads presents a picture that is both depressing and typical of virtually every country of the Caribbean and Central America, indeed the world. This situation, however, is remediable with sufficient resources, and because of the relatively low levels of development in Cuba and the large extent of its coastal zone, relatively isolated in its impact. What remains is a huge and highly

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host city has been home to ecological disaster so far in 2000. In January Brazilian oil giant Petrobras accidentally dumped 338,000 gallons of fuel oil in Rio's landmark Guanabara Bay, a spill that will take at least 10 years to recover from, according to specialists. Raw sewage pumped daily into the ocean off of Copacabana and Ipanema beaches has already forced officials to ban bathing in most of the world-famous waters, leading cartoonists to compare the bay to a toilet.

239. *See id.*

240. *See* Weber, *supra* note 224, at 23.

241. *See id*.

242. *See* Peter Weber, *Net Loss: Fish, Jobs and the Marine Environment*, WORLD WATCH (1994) (documenting worldwide collapse of fisheries, fishery jobs and income).

243. *See* Weber, *supra* note 224, at 23. ("5 to 10% of the planet's coral reefs have essentially been ruined by pollution and direct destruction, and another 30% could be lost in the next 10 to 20 years").

244. *See* NATURAL WILDLIFE FEDERATION, ENDANGERED SPECIES, ENDANGERED WETLANDS: A DIZZYING DEATH SENTENCE (April 1993) (documenting relationship between species endangerment and wetlands loss).

245. *See* Williams et al., *supra* note 232, at 18-19 (describing hurricane losses).

246. *See Env. Situation, supra* note 17, at 7.

247. *See id*. at 8.

248. *See Env. Situation, supra* note 17.

variable coastal seascape studded with thousands of additional small islands and keys. For Cuba's biological diversity on the one hand, and its economic development on the other, these are "The Prize."

The question is what Cuba will do with, and how much it will sacrifice for, coastal tourism. It has already had some sad experiences, particularly with a Miami Beach-cum-Cancun like resort hotel complex at Varadero on the north coast.[249] The mangroves were cut, the dunes were leveled, the buildings sit cheek-by-jowl on the beach itself and their wastes are funneled away, not far, to sewage lagoons.[250] Beach erosion has inevitably set in, and Cuba has begun Florida-style, offshore sand dredging to slow it down, trying to sustain the unsustainable.[251] Varadero draws tourists and will certainly draw more, but at least within CITMA, it is recognized as a problem and an object lesson in what not to do.[252] Of course, the same object lessons are also arising in Haiti and Puerto Rico.[253] With Cuba's authorization of independent and joint ventures for foreign investors,[254] the road to big time tourism is now open.

As of 1998, there were 21 joint ventures in tourism led by the Spanish-owned Sol Melia, with eight hotels operating and three more planned for construction that same year. Of the new hotels, one would be in Havana, one would be on the coast in the province of Holguin, and one on Coco Key, all of which are in the coastal zone.[255] Independent analysts project Cuba to receive $18.5 billion in economic impact from tourism by the year 2007; that number rises to $27.7 if free market capitalism has its way.[256] As Cuba's Vice-President of the Counsel of State stated in 1998, "I would not say that tourism is one of the sectors most important, tourism is the *heart* of the economy."[257] The implications of this growth on the coasts are obvious, but are dependant on where and how the growth occurs.

Enter coastal zone management. It is something of a race to get there first. As described by CITMA, "[t]he intensity with which

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249. Personal observation of the author, Varadero, Cuba, May 26, 1999.

250. *See id*.

251. *See id*. Interview with Teresita Borges Hernandez, CITMA, May 26, 1999.

252. Personal observation, *supra* note 249.

253. *See* Acosta, *supra* note 71, at 2 ("[L]ocal ecologists fear the kind of overdevelopment which has occurred in nearby Acapulco and Copacabana.").

254. *See Env. Situation, supra* note 17.

255. *See* Felix Blanco Godinez, *Cuba's Tourism Industry: Sol Melia As A Case Study*, *in* CUBA IN TRANSITION, ASCE 1998, at 53-5.

256. *See* Nicolas Crespo, *Back to the Future: Cuban Tourism in the Year 2007*, *in* CUBA IN TRANSITION, ASCE 1998, at 42.

257. Iraida Calzadilla Rodriguez, *Tourism is the Heart of the Economy*, GRANMA, Feb. 28, 1998 at 3 (emphasis added).

investments in the coastal zone are increasing and the diversity of interests that are found there require the rapid development of a legal tool to guarantee its protection and the health of marine ecosystems."[258] Thus, immediately following its over-arching, environmental impact analysis law, CITMA went to work on the coastal zone.

Decree Law 212 was hammered out within the agency and with other Ministry personnel during 1998, and finally approved in 2000.[259] The Law prescribes two zones: a "coastal zone" extending seaward to the continental shelf (between 100 and 200 meters depth) and from twenty to forty meters landward from a base;[260] and a second, "protection zone" extending another twenty to forty meters inland.[261] The coastal zone is declared to be open, public and free for public use;[262] all coastal development, including causeways and roads, is required to provide pedestrian and public access.[263] Articles 15 through 18 hold the keys to the gut issue: development control.

Article 15 begins with a general rule that "the coastal zone will remain presumptively unoccupied" by permanent structures.[264] In language that echoes United States law and that of several coastal states, activities and development will only be allowed as an exception to the general rule "where their purpose does not allow location outside the coastal zone," such as ports, piers, drilling platforms, navigation signals and national defense works.[265] In areas of the zone currently unoccupied by permanent structures, no new permanent installations will be permitted "except where justified for political or social reasons."[266] Several uses are specifically prohibited in the zone, including: sand extraction, land vehicles, new residences and hotels or enlargements of existing ones, and the disposal of

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258. *Env. Situation, supra* note 17, at 21.

259. *See* Decree-Law 212, Management of the Coastal Zone, Coazeta Oficial, Aug. 8, 2000 (Cuba) [hereinafter Decree-Law 212].

260. *See id*. at art. 4 (the distance inland varies with the type of coast, for example, twenty meters inland from cliffs, art. 4(b), forty meters inland from beach vegetation, art. 4(c)).

261. *See id*. at art. 5.

262. *Id*. at art. 12.

263. *See id*. at art. 13.1.

264. *Id*. at art. 15.1.

265. *Id*. These "coastal dependency" requirements are familiar features of state coastal management laws under the federal Coastal Zone Management Act, 16 USC §§ 1451 et.seq. (1999). *See* Pardue v. Stephens, 558 So. 2d 1149 (1989) (the non-wetland presumption for activities in the Louisiana coastal zone).

266. *Id*.

wastes.[267] These same presumptions, exceptions and prohibitions apply equally to the interior protection zone, with the exception of light structures such as concession stands, that can be easily removed and that have adequate waste treatment systems.[268]

In effect, Cuba has created a narrow, but well-defined zone of highly limited development. Under this law, new tourist hotels, roadways and the like will be stepped back from at least 40 to 80 meters from the vegetation line, which is to say from the dunes and beach. When one considers seaside development along Tampa, Florida, for example, or Cape Hatteras, North Carolina, these become significant requirements.

The agency review process is a bit more delicate. The Decree Law, in effect, creates a third zone of protection, through planning, under the joint custody of CITMA and the Ministry of Economy and Planning. As described earlier in this article, the Ministry of Economy and Planning is Cuba's lead land use agency; under Law 212 it remains in charge of "directing, formulating and controlling" coastal development,[269] including the master land use plans and site-specific "microlocalizacion" decisions.[270] These plans and decisions, however, are to conform to the requirements of the new coastal law. CITMA will "participate" in the "discussion, evaluation and approval" of the zoning plans and decisions, "seeking to introduce modifications that are deemed appropriate."[271] CITMA also reviews all impact assessments for these plans and projects, and grants the earlier-described environmental licenses.[272] Finally, CITMA is directed to "approve, direct and control" the development of "integrated coastal zone management strategies"[273] and "their implementation,"[274] to reconcile differences among agencies and other entities over coastal uses, and to issue the Law.[275]

Given these at least parallel, if not conflicting, authorities, it will not be clear for some time how their exercise will play out and which agency will emerge with the final say. At this moment, however, it is

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267. *See id.* at art. 16. An exception is provided for sand dredging if there are no other feasible sources of sand and if the dredging will not interfere with natural processes. *See id.*

268. *See id.* at art. 18.

269. *See id.* at art. 9.

270. *See Environmental Situation*, *supra* note 17.

271. Decree-Law 212 art. 8. CITMA is also to assure public participation in coastal decision-making. *See id.* at art. 8(j).

272. *See id.* at art. 8(b).

273. *Id.* at arts. 7, 8(e).

274. *Id*. at art. 8(1).

275. *See* Decree-Law 212, Final Dispositions, Three.

clear that Law 212 grants CITMA the maximum amount of decision-making power short of repealing the long-standing functions of the Ministry of Planning and starting anew. While conflicts between the Ministries may be inevitable, the combination of the two carries the upside potential of greater resources and administrative capacity for coastal management, somewhat similar to the concurrently-operated state coastal management and Environmental Protection Agency and Corps of Engineers wetlands protection programs in the United States.[276]

Law 212 accords a final set of protections for development of the Cuban keys, which, from the point of view of tourist development, are the prize within The Prize. Cuban projection for new housing on the coasts is relatively limited;[277] housing on the keys is identified by the Ministry of Economy and Planning as only nine percent of its projected capacity.[278] Obviously, the tug-of-war will be over the keys. Under Law 200, all permanent structures development or activities on the keys will run the gauntlet of a full environmental impact analysis and a CITMA license.[279] All construction is to be on solid ground, and in conpliance with the aforementioned setback requirements.[280] Construction is prohibited outright on keys smaller in size than the diameter of the coastal zone, and on those identified by CITMA as being particularly fragile, in the process of beach accretion, or covered by mangrove vegetation.[281] No wastes will be treated on keys except in systems proven in advance to be effective.[282]

To be sure, these are hardly prohibitions. They are, however, clearly legal handles. They are also incentives to develop tourism on the keys in a different, low-impact manner. There is no need to put hotels on the keys in order to view their wildlife or snorkel their reefs, and these alternative possibilities are now producing proposals for ecotourism that, in the long run, could be both profitable and environmentally sustainable. As one Cuban researcher is quoted as

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276. For a discussion of the value of "redundancy" and "overlap" in these U.S. environmental programs, see Oliver A. Houck & Michael Rolland, *Federalism in Wetland Regulation: A Consideration of Delegation of Clean Water Act Section 404 and Related Programs to the States*, 54 MD. L. REV. 1242 (1995).

277. *See Workshop on Coastal Zone Legislation*, Presented by CITMA in Havana, Cuba, May 24, 1999.

278. *See id*.

279. *See* Decree-Law 212 art. 26.

280. *See id.* at art. 28.

281. *See id.* at art. 27.1. CITMA is further authorized to designate keys with these characteristics, in effect, a development ban. *See id.* at art. 27.2.

282. *See id.* at Art. 29.

saying, " [t]he commercial success of the cays as a tourist attraction essentially depends on the state of preservation of the natural surroundings. "[283]

With these provisions on the books, particularly those for the coastal keys, one can see the battle lines forming over which activities are "coastal dependent", and thereby permissible, and which keys are sufficiently "fragile" as to bar any type of development at all. Into the fray will come the Ministries of Economy and Planning, Tourism, Foreign Investment, Mining, Forestry, Fisheries, and Agriculture, as well as foreign investment and private interests with their own axes to grind. No one can say how these battles will be resolved, although there is preliminary evidence that they lead to the same kind of incomplete compromises that are found in most coastal states and nations, or at least in those jurisdictions that pay any attention to the subject at all. Hotels will be stepped back from the mangroves, but will go forward.[284] Causeways will run to big keys, but with elevations to preserve hydrology and aquatic life.[285] Decisions like this, and far worse, are made in Louisiana, Mississippi and other Gulf Coast states every day.[286]

For the moment, it is enough to observe that Cuba, in the face of an economic imperative to develop its coasts for tourism greater than that driving any state of the United States or any nation of the Caribbean or Central America, has enacted a program which must be rated favorably for its specificity and its potential for protection. How protective the actions will turn out to be is beyond rational prediction, as it is for the similar individual coastal management programs of coastal states in the United States. The protections may

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283. Acosta, *supra* note 71, at 2 (quoting Rosa Jiminez, "a researcher studying the state of marine contamination by land polluters").

284. *See Workshop on Environmental Impact Analysis Legislation*, Presented by CITMA in Havana, Cuba, Oct. 1998 (describing permit controversy with hotel development on a coastal key, resulting in relocation to avoid mangrove impacts).

285. *See supra* text accompanying note 73.

286. For a discussion of the lackluster records of Gulf states in coastal zone management, see Houck and Rolland, *supra* note 276.

> Alabama has been able to facilitate condominium development on Perdido Key in contravention of its approved plan. Mississippi has permitted a sudden industry of gambling casinos in its coastal waters, to the exclusion of other uses identified as "priorities" in its coastal plan, drawing only the suggestion from NOAA for a "comprehensive review." Louisiana's coastal use permitting program, covering activities across 3.5 million acres, denies fewer than one application per year. As an administrator of the Louisiana program has explained, the act is "a resource management statute which practically precludes the Secretary from stopping any activity in the coastal zone."

Id. at 1298 (citations omitted).

vary from year to year, and will depend on the strength of the agencies involved, their leadership, their data, their popular support, and the support of the legal system itself. Presently in Cuba, the data look sound, the lead agency looks committed, the popular and political support are wild cards, and, as later discussed, the legal system is by no means up to its supporting role.[287]

VII. BIOLOGICAL DIVERSITY

> On a worldwide basis, biodiversity tends to be concentrated in the southern countries, while the institutions and resources for studying it tend to be located in the northern countries … Cuba provides an extreme case. With respect to biodiversity, it is the single most important country in the Caribbean islands, and this is true to an overwhelming degree.[288]

Dr. Michael Smith

> As the Castro government loses its tight control over the population, the mountain land will again be open to development. Additional pressures on the rain forest will arise because this is also a mineral rich area with proven deposits of manganese, copper, silver and gold. It is necessary to plan to protect the rain forests now. If plans are not in place, there will be little time to make them when Castro's fall triggers a rush to repopulate the area and clear the rain forests for agriculture.[289]

Bioprospective, in a Post-Castro Cuba

The idea of protecting biological diversity originated in the 1990's, relatively out of nowhere, and took center stage in international environmental law. Propelled by academic research, agency scientists and pharmaceutical companies, biodiversity became a swing issue for federal land management in the United

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287. *See infra* text accompanying notes 471 to 479.

288. Smith, *supra* note 29, at 13.

289. Larry Daley, *Bioprospecting in a Post Castro Cuba, in* CUBA IN TRANSITION, ASCE 1997, at 382, 388.

States,[290] a battleground at the World Summit in Rio de Janeiro,[291] and a generator for national conservation programs around the world. And in Cuba.

As a concept, biological diversity means two related but different things. The first is the conservation of biological resources, which most countries including the United States, have been approaching in a halting, piecemeal fashion for many years. Indeed, the history of conservation in the United States began with the setting aside of parks and forest reserves in the 1800's,[292] adding protections for certain wildlife species[293] and, then, endangered species in the 1900's,[294] without any particular effort, even by the year 2000, to identify the diversity of domestic species or to provide for their long-term perpetuation. The second face of biodiversity concerns access to and use of biological resources, basically genetic materials, for medicines, crop improvements and the exploding field of bio-technology. On this theme, the United States finds itself even more in arrears, with virtually no program to determine either access or uses beyond that found in traditional food and drug laws.[295]

In Cuba, both issues of biodiversity would become critical at the close of the century. Its biodiversity was extraordinary and largely unprotected, and the economic value of these resources in bio-technology became an element critical to Cuba's economic survival.

It is hard to overstate the biological importance of Cuba. A basic principle of conservation biology holds that the diversity of species increases on two axes, one being the size of the land mass under study, and the other being its isolation from other land masses and their species.[296] Large islands meet both criteria, hence the rich diversity of flora and fauna in Madagascar, Australia, Hawaii, and Cuba.[297] The Caribbean Islands host about 15,000 identified plant species, nearly the same number found in all of the United States and Canada combined.[298] Cuba, with 6,500 known plant species,[299] holds

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290. *See* Oliver A. Houck, *On the Law of Biodiversity and Ecosystem Management*, 81 MINN. L. REV. 869 (1997).

291. *See supra* text accompanying note 101.

292. *See* UDALL, *supra* note 6 (describing evolution of federal land and resource management programs).

293. *See* Migratory Bird Treaty Act, 16 U.S.C. § 703 (1999).

294. *See* Endangered Species Act, 16 U.S.C. §§ 1531 *et seq.* (1999).

295. *See* Edmonds Institute v. Babbitt, 93 F. Supp. 2d 63 (D.D.C. 2000) (ruling that a National Park Service bioprospecting agreement with a private company is a "dramatic change in national policy" requiring an environmental impact statement).

296. *See* EDWARD O. WILSON, THE DIVERSITY OF LIFE (1992).

297. *See id.* at 94-130.

298. *See* Smith *supra* note 29, at 14.

the lion's share of Caribbean plant kingdom, more than half of which are endemic, found only in particular locations and habitats.[300] An estimated 900 Cuban plant species are endangered.[301]

Moving up the food chain, Cuba hosts 2,947 species of mollusks, 1,300 species of spiders, and another 7,493 identified insect species, which may be only the tip of the iceberg.[302] According to Cuban scientists, forty percent of the fauna encountered in recent biological surveys are new to science;[303] more than ninety percent of the principal groups of terrestrial invertebrates,[304] and thirty percent of the vertebrates, are endemic species.[305] The potential limitations and peril faced by these species are obvious. The West Indies have lost over ninety percent of their land mammals since the 1500's.[306] Since that time, twenty-five to thirty percent of worldwide mammalian extinction has occurred on these islands.[307] That Cuba would hold such a rich, remaining inventory of flora and fauna is largely an accident of its history and relic pockets of its geography, which bought time for conservation to come into play.

Cuba's growing attention to biodiversity protection may be chronicled as pre-revolution, post-revolution, and post-Rio, 1992. As described earlier in this article, Cuba's expertise in the natural sciences dates back nearly two centuries.[308] Starting in 1930, Cuba began designating natural areas, but without legal protections or management, these declarations remained largely exercises on paper.[309] One of the first acts of the revolution was the Law of Agrarian Reform, which charged the state with protecting its natural areas, promoted programs of reforestation, and excluded forest reserves from distribution to agricultural collectives.[310] In the 1980's, additional natural areas were designated as biosphere reserves and

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299. *See Estrategia, supra* note 39, at 29.

300. *See* Smith, *supra* note 29, at 16 ("Endemism in Cuba ranges from 51percent in vascular plants to more than 90% in major groups of terrestrial invertebrates.").

301. *See* William Robert Irvin, Biodiversity Protection in Cuba 26 (unpublished manuscript on file with Center for Marine Conservation).

302. *See Estrategia, supra* note 39.

303. *See* Smith, *supra* note 29, at 15.

304. *See id*. at 16.

305. *See Estrategia, supra* note 39, at 33.

306. *See* Irvin, *supra* note 301, at 26.

307. *See id.*

308. *See supra* text accompanying note 35.

309. *See supra* text accompanying note 82.

310. *See id*.

initial efforts were directed towards creating a national system of protected areas.[311]

The centerpiece of the 1992 World Summit in Rio was the Convention on Biological Diversity.[312] The Convention not only declared "conservation of biological diversity," the "sustainable use" of its components, and the "equitable sharing" of the benefits of genetic resources to be goals of the Convention, but also further required signatory countries to develop "national strategies, plans, or programs" for the sustainable use of biodiversity.[313] More specifically, it required is member nations to establish systems of protected areas, to maintain viable populations of species in natural surrounding, to restore degraded ecosystems and promote the recovery of endangered species.[314] One hundred and seventy-two nations have since signed on to the treaty. Cuba, in 1993, was one of the first and CITMA took the exercise to heart.

For those who like detailed planning, the next steps will fulfill their every wish. In 1996 the International Union for the Conservation of Nature funded a detailed profile of the institutional and legal framework for the management of biological resources in Cuba.[315] The resulting document, authored by the current chief of CITMA's Environmental Policy Directorate, was both a summary of the hydra-headed nature of Cuban resource management, and a compelling case for change. Presaging Law 81 and many of its provisions,[316] the profile identified gaps in public and private law generally,[317] and with specific regard to species protection and to control of genetic resources.[318] In effect, the profile stated that with regard to the Convention it had ratified a few years earlier, Cuba was way behind the eight ball.

The next step called for in the Convention, and neatly congruent with Cuba's penchant for strategies, was the development of a National Strategy and Plan of Action for Biological Diversity.[319] Funded again by the United Nations and published in 1998, the plan had gone through an elaborate, two-year process of initial drafting, national and regional workshops, second drafting, more workshops,

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311. *See* Rossel and Puga, *supra* note 82, at 2.
312. *See* Houck, *supra* note 290.
313. *Convention on Biological Diversity*, *reprinted in* 31 I.L.M. 822, art. 6(a) (1992).
314. *See id.*, at art. 8(f).
315. *See Profile*, *supra* note 29, at 26.
316. *See id*. at 26-28.
317. *See id*. at 44-49.
318. *See id*. at 70-89.
319. *See Estrategia*, *supra* note 39.

and final approval with participation by virtually every related ministry, research institute and professional organization in the country.[320] The strategy provided an all-in-one-binder summary of Cuba's geography and its human, scientific and biological resources. It identified forty-two separate ecosystems,[321] seventeen of which were characterized as ecologically sensitive. Based on factors of rarity and value, the strategy ranked six ecosystems of highest importance, including wet forest, high mountain, and littoral areas.[322]

The strategy was also an action document stating that diversity conservation must be the "fundamental pillar" for sustainable development in Cuba,[323] and providing no fewer than 142 separate action items, each delegated to an identified lead agency, including participating agencies and time frame for completion (e.g. short, medium or long range).[324] Fourteen of these actions related to the development of law.[325] Among these were legal systems for diversity protection[326] and access to biological resources.[327]

Meanwhile, Cuba's scientific and technological investments in biological resources were beginning to bear fruit. Unlike many countries in Latin America seeking to control foreign access to the genetic heritage of their natural areas, or more realistically, to obtain at least modest revenue from foreign corporations developing it, Cuban science was very much in the game of product development. One of the early natural areas established by the government in 1959 was the Zapata Swamp, set aside as a reserve for the Cuban Crocodile, which at that time was thought to be gravely endangered if not extinct.[328] The recovery program included captive breeding, which has been so successful that plans are currently in the works for the sale of crocodile parts and products.[329] This success has in turn prompted efforts in aquaculture and other forms of commercial captive breeding.[330]

Cuba began working on biotechnology as early as 1965 with the establishment of a National Center for Scientific Research, whose

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320. *See id*. at List of Participants and Process of Development.
321. *See id*. at 29.
322. *See id*.
323. *See id*. at 51.
324. *See id*. at 55-75.
325. *See id*. at 60-62, items 44-56.
326. *See id*. at 60, item 45 (biodiversity protection legislation).
327. *See id*. at 44 (access to genetic resources).
328. *See supra* text accompanying note 84.
329. *See* Interview with Targarona, *supra* note 84.
330. *See Estrategia, supra* note 39, at 20.

mission was to solve biomedical and scientific problems important to Cuban economic and social life and to develop products for the international market. Since that time, Center scientists have developed the use of ozone to fight germs, speed the healing of wounds, and improve blood circulation; the use of new therapies for speech and hearing impaired children; and vaccines for cholera and other diseases.[331]

In 1981, Cuba started a Center for Genetic Engineering and Biotechnology that was the beginning of a $1 billion investment over the past twelve years.[332] The Center was producing the drug interferon within three years of its discovery in Finland,[333] and is now marketing *inter alia*, a recombinant hepatitis vaccine, a cattle tick vaccine, and industrial enzymes.[334] Reportedly in the works are a possible AIDS vaccine and disease-resistant strains of coffee, papaya and pineapple plants.[335] A new Center for Pharmaceutical Chemistry expands this work on products from both expired patents and native sources.[336] With funding from the United Nations Food and Agriculture Organization in 1997, Cuba developed biological controls for an insect plague affecting a dozen domestic crops.[337] Through a network of more than 200 laboratories and three production factories, it is creating other biological agents to control infestations of tomatoes, tobacco, cabbage, cucumbers, plantain, yucca, maize and coffee.[338] The limiting factor for biotechnology in Cuba is apparently not technology, but marketing.[339] In 1998, the United Nations Development Program announced new marketing support for Cuba, with a prediction that biotechnology will be "one of the life rafts for the Cuban economy."[340]

Compelled forward by the Rio Convention's conservation mandates and by its own need to manage a growing biotechnology

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331. *See id*.

332. *See id*. at 10.

333. *See UNDP Breaching New Markets for Cuban Biotechnology*, INTER PRESS SERVICE, July 20, 1998, *available in* 1998 WL 5988358 [hereinafter *UNDP*].

334. *See* William G. Schulz, *Cuba at a Crossroads*, CHEMICAL, Jan. 11, 1999, at 10.

335. *See id.*

336. *See id.*

337. *See* Dalia Acosta, *FAO Backs Bio-Pesticide Production*, INTER PRESS SERVICE, March 2, 2000.

338. *See id*. at 2.

339. *See UNDP, supra* note 333, at 2 ("[T]he international market 'has stripped the Cuban and the development of the industry dead.'") (quoting Ariel Terreno, economic journalist). Even so, biotech products contributed more than $200 million to national revenue in 1990-2. *See id*.

340. *Id*.

industry, Cuba is in the process of approving a new law on biological diversity.[341] While not final at the time of this writing, the outlines of the proposed law demonstrate a continued emphasis on the authority of CITMA and strong environmental controls. The law is divided in equal measure between conservation and biotechnology management.

The law's general conservation provisions declare the Biodiversity Strategy and Action Plan to be the operative instruments for biodiversity planning.[342] The Strategy-cum-Plan is to, *inter alia*, establish criteria and indicators for sustainable use, and the basis for an endangered species program.[343] All national and foreign entities working with Cuban biological resources are to include in their budgets sufficient moneys to carry out the actions of the Strategy / Plan.[344]

The law then proceeds to make special provisions for sensitive species and sensitive ecosystems. It recognizes five categories of protected species: rare, vulnerable, endangered, critical, and extinct.[345] CITMA is to develop a National Red Book, similar to that of the IUCN, classifying all eligible species.[346] Any citizen or institution may petition the agency for the addition of threatened or endangered species.[347] Candidate species, about which insufficient information exists, are to be subject to special protections and used only for scientific investigation relating to their classification.[348] CITMA is prohibited from granting an environmental license for an activity that would cause a species to be listed in any of the aforementioned categories, or that would cause it to be placed in a category of higher risk.[349] CITMA is furthermore required to establish protective measures appropriate for each category of species,[350] and to approve management plans of other Ministries to implement these protections.[351]

The protections for sensitive ecosystems are equally explicit. CITMA is to identify such ecosystems according to Rio Convention

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341. *See* Decreto-Ley No. _____, De la Diversidad Biológica, April 2000 (draft, unpublished, on file with author).
342. *See id.* at art. 11.
343. *See id.* at art. 12.
344. *See id.* at art. 13.
345. *See id.* at art. 15.1.
346. *See id.* at art. 20.
347. *See id.* at art. 16.
348. *See id.* at art. 17.
349. *See id.* at art. 8.
350. *See id.* at art. 15.2
351. *See id.* at art. 18.

criteria, and to rank them in the same order of endangerment used for species classification.[352] All agencies are to ensure that, under their management, viable populations of species reflecting the health of these systems ("indicator species") are maintained.[353] Furthermore, any plan, program or activity that could produce adverse effects on the natural functioning of these ecosystems is prohibited.[354] In exceptional cases and for an overriding social purpose, CITMA is authorized to approve an activity just described, but only when it has been demonstrated that no alternative exists to avoid the impacts in question.[355]

These provisions are worth a pause and a comparison to US law. For endangered species, the law is similar to the Endangered Species Act in its fundamental structure, with provisions for listing, protections, and recovery planning.[356] As in the United States,[357] outside parties in Cuba may petition for new listings and, given the knowledge and activity of the Cuban scientific community, this process may turn out to drive the listings forward. The listing categories are more ample than those found in the ESA, which includes only endangered and threatened species.[358] The standards of protection, prohibiting impacts that would elevate a species' classification, are also more protective than that of the ESA, which prohibits only activities that would "jeopardize the continued existence" of a species.[359] Recovery planning is, likewise, potentially more powerful, through the requirement that these plans be incorporated in the plans and activities of other agencies. In the United States, recovery plans are not so incorporated, and are often ignored.[360] On the endangered species' side, this is stronger law than that in the United States.

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352. *See id.* at art. 32. These provisions apply to all ecosystems. Similar and more detailed provisions apply to areas already protected by national law. *See, e.g.*, *id.* at arts. 22-25.

353. *See id.* at art. 33.1

354. *See id*.

355. *See id.* at art. 33.2.

356. For an overview of the functioning of the Endangered Species Act, see Houck, *supra* note 290.

357. *See* 16 U.S.C § 1533(b)(3)(A) (1999).

358. *See id.* § 1533(a).

359. *See id.* § 1536(a)(2); *see also* § 1539(a)(2)(B)(iv) (allowing "take" of a listed species if it will not "appreciably reduce the likelihood of the survival and recovery of the species in the wild."). This is the same standard needed to determine "jeopardy." *See* 50 C.F.R. § 402 (1992).

360. For a discussion of the weaknesses in U.S. recovery planning, *see* Timothy H. Tear et al., *Status and Prospects for Success of the Endangered Species Act: A Look at Recovery Plans*, 262 SCIENCE 976, Nov. 12, 1993 ("According to these measures, even if population [recovery] goals were achieved, 60% of the ESA's threatened or endangered vertebrate species would remain in

There is no parallel in the United States for the ecosystem provisions proposed. In recent years, the United States Congress has avoided even the idea of identifying biological diversity or endangered ecosystems,[361] much less protecting them.[362] In the Strategy, Cuba has already done the work of identifying its sensitive ecosystems and placing them in rank order of importance and endangerment.[363] The first method it has chosen to secure their conservation is the indicator species approach, referenced in the Rio Convention.[364] The United States has adopted this same approach in the management of its National Forests[365] and on the occasions where it has been conscientiously applied, has realized considerable success.[366] Highly controversial in the United States, in large part because of the protections it affords, this approach has not been adopted by any other U.S. agency. The proposed law's second layer of protection, based on ecosystem functions, is *terra incognita* for the United States and most countries.[367] The exception to this protection which the Cuban law provides, based on findings of an overriding national purpose and the demonstration of no alternative courses of action, is the same escape valve found in United States laws protecting public parks, wetlands and endangered species.[368]

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peril, with roughly a 20% probability of extinction within 20 years or 10 generations, whichever is longer.").

361. *See* Warren E. Leary, *Battle Over the Budget, the Researchers: Work Stops at Labs and Waste Sites*, N.Y. TIMES, Jan. 5, 1996 (describing congressional attack on the U.S. Biological Survey).

362. Proposed legislation for the protection of biological diversity has languished in the U.S. Congress for more than a decade without even a faint hope of passage. *See* National Biological Diversity Conservation and Environmental Research Act, H.R. 585, 102d Cong. (1991).

363. *See supra* text accompanying note 352.

364. *See id*.

365. *See* 36 C.F.R. § 219.19 (discussing that National Forest planning regulations require management to ensure viable populations of indicator species).

366. For a discussion of the logic of forest management plans in the Pacific Northwest and in the Tongass National Forest of Alaska, in response to the application of indicator species requirements, see Houck, *supra* note 290, at 892, 899.

367. The U.S. Forest Service has proposed new, ecosystem-based first management planning regulations, 64 Fed. Reg. 54074 *et seq.* (1999), which have, in turn, prompted a firestorm of opposition from commodity users and "property rights" organizations. *See* AMERICAN LAND RIGHTS ASSOCIATION, FOREST SERVICE LAND USE PLANNING REGULATIONS: URGENT ACTION REQUIRED, Feb. 3, 2000.

368. For a discussion of the "no feasible alternative" standards of protection under section 4(f) of the Department of Transportation Act, 23 U.S.C. § 138, that protects public parks and recreation areas, and section 404 of the Clean Water Act, 33 U.S.C. § 1344, that protects wetlands, and section 7 of the Endangered Species Act, 16 U.S.C. § 1531, see Oliver A. Houck, *Of Birds, Bats and B-A-T: The Convergent Evolution of Environmental Law*, 63 MISS. L. J. 403, 439-42 (1994).

The access and biotechnology provisions are remarkable in granting CITMA the power to negotiate and sign all contracts for access to biological resources, including genetic resources[369] and the related knowledge and culture of local communities.[370] This authority is not surprising, given the large web of scientific institutes and research stations already under the CITMA umbrella. Access to resources under the management of another agency, such as the Ministry of Forestry, requires both permission from that agency, in the form of a permit, and a contract with CITMA.[371] Access is to be limited where, *inter alia*, it could affect listed species, sensitive ecosystems, public health or biological security.[372] These limits noted, the terms and conditions are in CIMTA's hands.[373]

In sum, in its proposed law for biodiversity, CITMA has taken advantage of the Rio Biodiversity Convention to move forward several large steps towards ecosystem management and the management of genetic materials. Its conservation provisions, on their face, exceed those that are found in United States law, and indeed address the issue more comprehensively than the United States has yet dared to do. Its biotechnology provisions impose management also unknown to the United States, although similar to those in several Latin American countries with significant biological resources.[374]

Whether the law finally emerges in this or a modified form, the remaining questions of implementation and enforcement remain, as is the case with environmental impact analysis and coastal management, discussed below. Implementation begins, however, with substantive law, and Cuba has begun to create law on these issues that is both action-forcing and open to observe. To be sure, these laws could simply prove to be a higher level of lip service. If so, however, Cuba has invested seven years and considerable resources creating an entire new Ministry in order to fool the world. A more likely conclusion is that the Cuban government wants this process to go forward, but that large obstacles stand in the way.

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369. *See* Decreto-Ley *supra* note 341, art. 62.1.

370. *See id.* at art. 64.

371. *See id.* at art. 62.

372. *See id.* at art. 71.

373. CITMA may also propose to the Ministry of Finance and Prices that contracting parties receive tax breaks and outright exemptions in cases where they agree to dedicate portions of their revenue to endangered species protection, environmental quality or improvements in local communities. *See id*. at arts. 81-2.

374. *See* Ley No. 26821, Ley Organica Para el Aprovechamiento Sostenible de los Recursos Naturales (June 25, 1997) (Peru).

VIII. IMPLEMENTATION

After proposing the Biodiversity law, CITMA put its substantive law-making machine on hold to concentrate on implementation of the current laws. Within the Agency, this is the province of the Office of Environmental Management and Inspection,[375] with technical support from more than two-dozen CITMA institutes and other agencies.[376] It is also somewhat *terra nova* both in its process and the standards that will be applied.

Law 81 required CITMA to develop a system of environmental inspections and enforcement,[377] and a schedule of penalties for environmental violations.[378] In its inspection system, CITMA may enlist other resources, including non-governmental organizations to assist in these inspections,[379] and all facilities are required to provide both information as requested and access to project sites.[380] Upon discovery of irregularities, CITMA may issue compliance orders, set deadlines for their performance, suspend project licenses either temporarily or permanently, order the removal of wastes, require full restoration,[381] and refer violations for criminal prosecution.[382] In December 1999, the Cuban Council of State approved a schedule of administrative fines for environmental violations,[383] and CITMA concurrently adopted a process delegating certain sanctions to local and provincial inspectors and authorities.[384] The authority and process are now in place.

The standards for inspections and enforcement will serve in the near future as the conditions for the environmental license. As

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375. *See Profile, supra* note 29.

376. *See* CITMA, *Normas de Gestion Ambiental [Standards of Environmental Management]*, July 1999, at 7 [hereinafter *Standards*].

377. *See* Law 81 art. 39. In fact, CITMA had promulgated a regulation for environmental inspection in 1995, setting out its enforcement goals, and had established an Environmental Inspection Directorate. *See* CITMA, *Profile, supra* note 29, at 75-76.

378. *See* Law 81, Second Interim Provision.

379. *See id.* at art. 45.

380. *See id.* at art. 41.

381. *See id.* at art. 43. Parties affected by these decisions may appeal through "all remedies established by law." *Id.* To date, this means the same, informal appeal process within the Ministry seen in the environmental impact assessment provisions. *See supra* note 215. This process is followed by appeal to the economic chambers of the court system. *See supra* text accompanying note 59.

382. *See id.* at art. 42.

383. *See* Decree-Law 200. The amount of these fines is rather modest at a maximum of $5,000 per violation, and it is obvious that CITMA will need to resort to other sanctions and incentives to ensure compliance from multi-national corporations and other major actors. *See id.*

384. *See* Resolution 19/2000 de la Ministerio de Ciencia Technologia y Medio Ambiente (Cuba), Dec. 1999.

described earlier, in conjunction with Cuba's emerging environmental impact analysis program, these analyses will provide the basis for both resource use (e.g., set-back requirements, access roads, waste management) and pollution control (e.g., discharge volume, timing, monitoring) requirements. The new coastal and biodiversity laws will provide additional standards for conditions of resource management, as will at least one pre-existing standard for streamside vegetation in watershed protection.[385] For pollution control management, however, Cuba remains wedded to regulation by ambient standards, never an easy trick in even the best circumstances.

As of July 1999, Cuba had adopted ambient standards for air quality, water quality and noise pollution. Ambient regulation requires at least four steps: the prescription of safe limits for pollutants in the environment; monitoring efforts to determine when these limits are exceeded; identification of the causes of violations of these limits; and remediation of these particular causes.[386] This process was the original approach to pollution control in the United States and other countries, and it largely failed.[387] The science, money, manpower, and political will necessary to make ambient controls work have been found lacking in virtually every program that has depended on them, including air and water quality, and hazardous waste cleanup.[388] For these reasons, United States law, and subsequently, that of the European Union, turned to standards based on best available technology. As a result, for the sources covered by these new, technology-based standards, pollution loadings plummeted.[389] On this record, ambient standards are not a good place for Cuba to begin its pollution control.

On the other hand, Cuba does not have an extensive, industrial point-source base to which technology standards most easily apply. Its agriculture and mining industries, which have the greatest environmental impact, present diffuse sources of pollution that are both difficult to measure and more easily controlled by management

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385. *See Standards*, *supra* note 376, at *Franjas Forestales de las Zonas de Proteccion a Embalses y Cauces Fluviales [Forest Edge for Watershed Protection]*.

386. *See* Rodgers, *supra* note 147.

387. *See* Oliver A. Houck, THE CLEAN WATER ACT TOTAL MAXIMUM DAILY LOAD PROGRAMS: LAW, POLICY AND IMPLEMENTATION, ENVTL. LAW INST. (1999) (discussing the failure of ambient standards in U.S. water quality programs).

388. *See id.* at 165.

389. *See* Houck, *supra* note 368, at 417-428.

practices (e.g., streamside vegetation, containment ponds).[390] Nor does Cuba have sufficient resources on hand to provide treatment for municipal and domestic wastes. Best technology means little without the money to apply it.

For these reasons, Cuba's choice of a case-by-case approach to implementation of its pollution control standards is defensible. It can be seriously doubted whether Cuba will, in practice, attempt the complex correlations required to apply ambient standards to particular facility discharges. Rather, the ambient standards will in all likelihood be used as indicators of "hot spots," on which CITMA needs to focus inspection and compliance. That focus will involve the same type of "best professional judgment" seen in the early implementation of environmental law in the United States,[391] a structure for jawboning towards the best controls that a particular facility can achieve one year, and then the next, and the next. Uniform and higher-level performance standards, such as best available technology, will likely be reserved for new investments,[392] again as in United States law.[393]

In short, Cuba will be approaching the implementation of its laws with a mix of standards and jawboning familiar to observers of environmental law in any country. Guidelines for inspection and enforcement are next on the drawing board.[394] How well they work will depend in large part, as they do everywhere, on good faith, political will and, over time, mechanisms to encourage "beyond compliance" environmental performance from the development sector. It will also depend on other aspects of Cuban governance that could either swallow them or be greatly influenced by the advance of environmental law. These circumstances include the state

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390. These factors have led to the exclusion of non-point sources from the U.S. Clean Water Act permitting programs, and to the burgeoning non-point source problem now facing the United States today. *See* Houck, *supra* note 387, at 60-63, 85-86. The difficulty in controlling non-point sources in the United States is not the unavailability of remedies but, rather, the absence in United States law of legal mechanisms to enforce them. *See id.* at 87, 88.

391. *See* RODGERS, ENVIRONMENTAL LAW, Air and Water, Vol. 2, pp. 416-7, n.60 (1986) ("The terms 'best practicable judgment' or 'best professional judgment' by the Administrator are now replaced by 'best engineering judgment.'").

392. Interview with Orlando Rey Santos, CITMA (Oct. 1999) (on file with the author).

393. The Clean Air Act and Clean Water Act impose higher performance standards on new than on existing discharge sources in the United States. *Compare* 42 U.S.C.A. § 7411 (setting new source standards under the Clean Air Act), *and* 33 U.S.C. § 1316 (setting new source standards under the Clean Water Act), *with* 42 U.S.C. § 7401, *and* 33 U.S.C § 1311 (setting existing source standards under the acts).

394. Environmental standards, monitoring, inspections and enforcement are all new to Cuba, which until the initiatives described above, had been proceeding on a la rgely *ad hoc* and ineffective basis. *See* Santos, *supra* note 90, at 18.

of the Cuban economy, its dependence on state-owned enterprises, and the rule of law.

IX. THE ECONOMY

> [The special period] is a period of readjustment ... requiring maximum economizing and austerity in economic and social policies, along with many creative initiatives, a large number of which have come directly from the people. Many of the steps taken as a result of the special period fit in with the strategic lines prepared by the Revolution. Some of them have helped accelerate the policies put into effect by the country in defense of the environment. [395]

Fidel Castro, 1992

The dominant event of Cuban life in the 1990's was the crash of its economy. In 1989, the former Soviet Union and its socialist allies purchased roughly eighty-five percent of Cuba's exports, and provided a like share of imports on heavily subsidized, economically favorable terms.[396] The subsidies alone amounted to an estimated $500 per Cuban citizen per year.[397] This dependency was reinforced by a United States embargo, which in the 1990's tightened to prohibit trade between the United States and Cuba and to oppose economic assistance from other countries.[398] With the fall of the Soviet bloc, Cuba lost the major markets for its sugar and agricultural products and up to eighty percent of its imports.[399] All categories of imports were decimated, among them oil (by seventy six percent), transportation equipment (86 percent), consumer goods (82 percent), chemicals (72 percent), machinery, spare parts and food. The gross domestic product per capita fell by more than forty-eight percent.[400]

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395. Sergio Diaz-Briquets and Jorge F. Perez-Lopez, *The Special Period and the Environment*, *in* CUBA IN TRANSITION, ASCE 1995, at 283 (quoting Castro's speech to the June 1992 Earth Summit in Rio de Janeiro, Brazil).

396. *See id.* at 281.

397. *See* Rolando H. Castañeda and George Plinio Montalván, *The "New" Cuban Economic Model (Or Socialism with Cuban Characteristics)in* CUBA IN TRANSITION, ASCE, 1995, at 154.

398. *See* Ramlogan, *supra* note 48, at n.17.

399. *See* Raul Garrido Vasquez, *Trade and Non Trade Measures Modifying Production Patterns*, (unpublished manuscript on file with author).

400. *See* Diaz-Briquets and Perez-Lopez, *supra* note 395, at 283.

The economy hit rock bottom in 1994-95, from which it has begun a slow recovery.[401]

The most obvious effect of the crash on the environment was that Cuba did not have the resources even to maintain its existing levels of pollution treatment and sanitation, much less advance them. Moreover, with an overwhelming need for currency, Cuba was in no position to reject whatever new proposal came down the pike, no matter what environmental impact it carried.

Assessing these impacts in reverse order, the fact is that no country rejects development proposals for environmental reasons. Even with the statutory authority to veto new projects in rare and valuable wetlands, the United States Environmental Protection Agency has continuously approved wetland dredge and fill projects at a rate of 10,000 individual permits a year for almost thirty years, and has vetoed such permits only a dozen times.[402] The United States Department of the Interior, with an effective veto over federal activities threatening endangered species has, over the course of thousands of consultations since 1976, found "jeopardy" to species only a handful of times, and then found project modifications to avoid it.[403] At the state level, the State of Louisiana approves no end of environmentally harmful activity,[404] and it is hardly unique in this regard. None of these observations make the case that environmental law is, thus, ineffective. Rather, they make the case that environmental law works by finding modifications and imposing conditions that allow development to go forward.[405]

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401. *See* Dalia Acosta, *Economy-Cuba: No End to Crisis This Year, Say Experts*, INTER PRESS SERVICE, March 17, 2000 (quoting Armando Nova, *The Cuban Economy in the 1990s*, which estimates the Cuban gross domestic product growth for the year 2000 at 3.5 to 4.6 percent, far behind the 6.2 increase recorded in 1999). *See also Report*, *supra* note 28, at 17-18; Gordon, *supra* note 41.

402. *See* Houck and Rolland, *supra* note 276, at 1243, n.1 (showing that out of 10,920 individual wetland development permits processed in fiscal year 1994, only 98 were denied, a rate of less than one percent).

403. *See* U.S. GENERAL ACCOUNTING OFFICE, ENDANGERED SPECIES ACT: TYPES AND NUMBER OF IMPLEMENTING ACTIONS (1992); WORLD WILDLIFE FUND, FOR CONSERVING LISTED SPECIES, TALK IS CHEAPER THAN WE THINK: THE CONSULTATION PROCESS UNDER THE ENDANGERED SPECIES ACT (1992).

404. *See* Oliver A. Houck, *Land Loss in Coastal Louisiana*, 58 TUL. L. REV. 1, 148-150 (1983) (finding that out of several thousand permits processed for wetland dredge and fill, only four were denied).

405. *See Wetland Regulation: Four Viewpoints on Section 404*, EPA J., Jan.-Feb. 1986:

> As a result of this [404] process, the Corps of Engineers annually denies slightly more than three percent of project applications. About one-third of the permits are significantly modified from their original application, and about 14 percent of the 11,000 annual permit applications are withdrawn by applicants. The Congressional Office of Technology

Such will be the case with Cuba. CITMA, whatever its legal authority to veto a project by withholding an environmental license,[406] exercises this power by conditioning results in much the same way these results are conditioned in other countries. It will win some of these battles and lose others. There is evidence, for example, that CITMA, during the time it was getting itself together, could not hold the line on requiring private sewage treatment for new hotels in Havana.[407] There is more recent evidence, on the other hand, that the agency is holding firm on conditions for licenses to hotels in the coastal zone.[408] This is similar to the track record for environmental law found in coastal management for the State of Mississippi[409] and in air quality management for the State of Texas.[410] The record is also like that of Mexico, Panama and most Latin American countries that face similar, if not quite so acute, economic imperatives.[411] Cuba may not have the option of refusing harmful projects, but refusal is rarely an option anywhere. The power to say "no," in practice, leads to less harmful projects, and this is about as far as contemporary environmental law goes.

Beyond influencing Cuban environmental decisions, Cuba's economic crises has had two quite unintended consequences that could turn out to be silver linings in the years ahead. The first has

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> Assessment has estimated that these denials, modifications, and withdrawals save 50,000 areas of precious wetlands every year.

Id. at 3.

406. *See supra* text accompanying notes 158-178.

407. *See* Interview with Monreal, *supra* note 69.

408. *See* Coastal Zone Workshop, Presented by CITMA in Matanzas Province, Cuba, Oct. 1998 (describing permission for hotel development on a key, but relocated to avoid mangrove wetlands).

409. *See* Houck and Rolland, *supra* note 276 (critiquing the Mississippi coastal plan).

410. *See* Scott S. Greenberger, *Environmentalists Blame Bush Policies for Smog* (visited Oct. 20, 1999) <http://www.austin360.com/news/features/national/1020bushair.html>.

> A definitive answer to the question of whether Texas' air is cleaner or dirtier than it was in 1995 is elusive. Citing TNRCC statistics, Tucker points to a 10 percent reduction in industrial air pollution since Bush has been in office. But the Texas Air Crisis Campaign, relying heavily on data from the U.S. Environmental Protection Agency, argues that most indicators on smog and other pollutants point to an increase in air pollution in most areas of the state. EPA officials cautioned Tuesday that there are many different types of air pollution, and many different causes, and that Texas' record during the past five years is a mixed bag of improvements and setbacks.

Id.

411. *See* Luis R. Vera-Morales, *Environmental Issues Arising From the Mayan Gate Pier Project in Cozumel, Quinta Roo, Mexico*, *in* NAFTA: LAW AND BUSINESS REVIEW OF THE AMERICAS, Winter 1996, at 44 (describing Mexican permits for new dock and resort development within the Cozumel Marine Refuge).

been to wean Cuba of its dependency on high-polluting, Soviet-built machinery and factories and industrialized agriculture featuring large-scale irrigation schemes[412] with large inputs of chemical fertilizers and pesticides.[413] The dam and irrigation binge, similar to that in the western United States, led to widespread salinization and soil problems that persist today.[414] By the late 1980's, the effects of chemical fertilizers were perceived to be so serious on inland and coastal water quality that, even before the crises, ninety sugar cooperatives were converted for use as organic fertilizer.[415] The loss of fertilizer imports increased this conversion, and Cuba has capped the application of fertilizers overall, for both economic and environmental reasons.[416] Between 1989 and 1992, the application of chemical fertilizers dropped from around 2.6 million to about 817 thousand hectares.[417] Herbicide use dropped as well, from 2.2 million to 1.7 million hectares during the same time frame.[418] Cuba's scientific institutes began producing biological pest controls.[419] Like it or not, Cuba was being forced towards sustainable agriculture.[420]

Similarly, Cuba has been separated from a transportation system that was certainly more serviceable than that which exists today, but was both energy inefficient and highly polluting. As Fidel Castro noted in 1990, before the economic fall, "[t]he Hungarian buses travel six kilometers on a gallon of fuel. They fill the city with smog. They poison everybody. We could get together some data. We could get statistics on the number of people killed by Hungarian buses."[421]

With the fall, Cuba imported more than 1.2 million bicycles from China and established at least five bicycle assembly plants on the island.[422] In the city of Havana alone, a 1992 estimate put 500,000 bicycles in operation, serving a population of 2.1 million.[423] One consequence of the collapse of automotive transportation has been massive inconvenience and delays. But another consequence is that

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412. *See generally* Sergio Diaz-Briquets and Jorge F. Perez-Lopez, *Water, Development, and Environment in Cuba: A First Look*, *in* CUBA IN TRANSITION, ASCE 1995.

413. *See* Diaz-Briquets and Perez-Lopez, *supra* note 395, at 284.

414. *See Env. Situation*, *supra* note 17, at 10-11.

415. *See* Diaz-Briquets and Perez-Lopez, *supra* note 395, at 282.

416. *See id*. at 283.

417. *See id*. at 284.

418. *See id*.

419. *See supra* text accompanying notes 332-338.

420. Cuba was also being forced into materials recycling. *See* Holly Kaufman, *A Revolution of Necessity: Crises forces Conservation in Cuba*, EARTH ACTION NETWORK, INC., Dec. 1993.

421. Diaz-Briquets and Perez-Lopez, *supra* note 395, at 285 (quoting Fidel Castro, 1990).

422. *See id.*

423. *See id*.

one can walk the streets of Havana in safety, and in the words of one observer, "almost smog free"[424] … unlike Mexico City, Guatemala City, Santiago and the capital cities of virtually every auto-dependant country of Central and South America.

Beyond these immediate effects, the overall effect of Cuba's economic doldrums on environmental policy has been to buy time for that policy to take hold. While the statements of Fidel Castro that Cuba is to become a "showplace for sustainable development"[425] ring like the rhetoric of any politician seeking world favor, the fact is Cuba has an opportunity to go farther in that direction than its neighbors who have already been overwhelmed by the automobile, disposable products, and unplanned development. The City of Havana still holds the rail beds of a trolley system that provided mass transit with the same level of access and convenience as that in New Orleans and many other North American cities a century ago. An operating rail system, built initially for the sugar trade, still runs in the countryside, networking the island. With only a few heavily-polluting electric power plants and a half-built nuclear station now abandoned, sun-rich Cuba has the opportunity to build solar, wind and other technologies into a national energy system. Havana, once the most beautiful urban landscape in the Americas, could be so once again. Or it could become Miami. As discussed earlier, the same can be said for Cuban beaches, coasts, and biological resources.

The most positive effect of Cuba's failed economy on its environmental policy is that, in large part due to this failure, there is still an environment worth saving. Unlike many of its neighbors, Cuba has the time, barely, to get an environmental policy in place before a massive wave of development that is already, literally, hitting the beach.

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424. *See id.* at 286 (quoting from National Pubic Radio, 1995). The validity of this observation is diminishing over time, with inevitable influx of automobiles, leaded gasoline and minimal environmental controls. It is no longer "smog free," and at times not even pleasant, to walk Havana's Malecon alongside the on rushing traffic.

425. *See id.* at 283.

X. STATE-OWNED ENTERPRISES

> Undoubtedly, part of the failure of the primary environmental agencies in Cuba to enforce environmental laws lies inextricably in the fact that the State is the primary polluter.[426]
>
> Protection of the Environment in Cuba

State-owned enterprises are, of course, closely connected to Cuba's current economic crises, but they present distinct problems for environmental policy as well. In brief, state enterprises have proven to be not only unsuccessful engines for economic growth but unresponsive to environmental policy as well.

Perhaps the most conclusive lesson of world history in the twentieth century was the superiority of free market capitalism to state-owned socialism in the production of goods and services. A less well observed corollary, but equally well proven, is the lack of success any nation has had in applying environmental law to state-owned entities. As the Soviet Union emerged from its own experience with state owned industries, President Boris Yeltsin announced that it was time to tell the Russian people "openly and honestly about the scale of the ecological disaster we have inherited" and its effects on public health.[427] Pollution exceeded standards in every respect; a quarter of Russia's drinking waters were unsafe; all of its major rivers were polluted; and the landscape was studded with dumps of pesticides and chemical waste.[428] Even in the United States, the performance record of the federal government and of local municipal treatment systems is well below that of private industry,[429] and the costs for cleanup of federally owned nuclear energy and weapons facilities will be counted in hundreds of billions of dollars.[430] None of this is to say that free market capitalism pro-

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426. *See* Ramlogan, *supra* note 49.

427. *See* Kathy Lally, *Russia Levels with People on Pollution*, TIMES-PICAYUNE, October 8, 1992 at A-25. For a discussion of the environmental legacy of Commission in the Soviet Union, see Katherine N. Harman-Stokes, *Community Right-to-Know in the Newly Independent States of the Former Soviet Union: Ending the Culture of Secrecy Surrounding the Environmental Crisis*, 15 VA. ENVTL. L.J. 77, 78-93 (1995).

428. *See* Lally, *supra* note 427.

429. *See* U.S. GENERAL ACCOUNTING OFFICE, WASTEWATER DISCHARGERS ARE NOT COMPLYING WITH EPA POLLUTION CONTROL PERMITS i-iii (1983) (stating that sewage treatment plants are out of compliance more than 50 percent of the time).

430. *See* David Armstrong, *The Nation's Dirty, Big Secret*, BOSTON SUNDAY GLOBE, Nov. 14, 1999. "Federal agencies have contaminated more than 60,000 sites across the country and the

duces better environmental results, as the history of the western world up to the late twentieth century also attests.[431] It does, however, provide the *possibility* of better results, which is much of the story of environmental law for the last thirty years.

The reasons for economic and environmental failure of state owned systems are much the same. Nobody who goes to city hall for a driver's license or a building permit comes away happy. There is little way to provide meaningful incentives for initiative and production, or even simple courtesy, in a government-owned facility. Moreover, there is little way to provide sanctions for noncompliance with economic or environmental goals. It is not easy, nor very effective, for the government to fine itself. It is even less feasible to foresee a government enjoining itself for pollution violations in a court of law. These difficulties are compounded in systems that attempt, as in Cuba, to equalize wages and guarantee employment. The problems faced by the United States in sanctioning non-functioning, municipal treatment works, or under-performing defense installations, bear witness that these problems persist in the best of families. They are institutional. They present a huge problem for Cuba.

Were Cuba mired in its past, this problem might defeat real environmental policy in Cuba all by itself. Cuba, however, is maneuvering rapidly to modernize its economy while, at the same time, retaining its political grip. As noted earlier, Cuba has liberalized its foreign investment law to allow joint ventures, licenses and even ownership of Cuban property by foreign corporations.[432] These ventures are bearing fruit most noticeably in tourism, mining,

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cost of cleaning up the worst sites is officially expected to approach $300 billion, nearly five times the price of similar destruction caused by private companies. " *Id.* at A1. "DOE this year told Congress it will spend at least $147 billion to cleanup 113 sites across the country —and that the work will take another 75 years to complete. " *Id.* at A33.

431. *See* PRESIDENT'S COUNCIL ON ENVIRONMENTAL QUALITY, ENVIRONMENTAL QUALITY (1970) (cataloguing uncontrolled environmental problems of the United States by resource and by issue). Cuban economists are aware of this risk; as one Cuban economist has written: "history has demonstrated how irrational is the use of the resources when submitted to the blind forces of the market, above all it has demonstrated its inability to protect natural resources." Interview with Vazquez, *supra* note 129. Indeed, Cuba faced two large "free-market" proposals in the 1950's that would have had devastating environmental consequences. The first was the 1954 approval of a canal bifurcating the island from the Atlantic to the Gulf, flanked by a commercial zone leased to foreign developers for 99 years. *See* JOSÉ CANTÓN MAVARRO, HISTORIA DE CUBA 163 (1996). The second was the Batista government's approval, at about the same time, of a plan to destroy parts of the old City of Havana facing the historic Malecon, for the construction of casinos by a Nevada-based organized crime family. Personal interview with Professor Marcel Suarez, University of Havana, in Havana (Jan. 15, 2001).

432. *See supra* text accompanying note 172.

telephone service, agriculture, cement manufacture, and transportation.[433] Cuba is reforming its banking and insurance laws, over-hauling its tax system,[434] and, as earlier noted, has created an "economic chamber" within the judiciary to settle trade and business disputes.[435] It has opened limited opportunities for self-employment, private restaurants and bed-and-breakfast-like accommodations.[436] Indeed, by the late 1990's, more than 200,000 individuals in the city of Havana were self-employed.[437] Cuba is also allowing new forms of property ownership, more extensive private ownership of agricultural lands, and cooperative and farmers' markets.[438] In 1995, more than 4,000 farm cooperatives and 86,000 private producers existed alongside Cuba's state-run agricultural enterprises, then only thirty percent of Cuba's farmland remained in government collectives, down from seventy-five percent at the beginning of the decade.[439]

State-run enterprises are also in flux. On the table for consideration are the limitation and elimination of production subsidies, and adjustments to salaries and employment rights. Water and electric utilities are scaling rates to foster conservation in lieu of consumption.[440] State institutes and businesses are being given ten percent of the profits from new projects and programs that they generate; these incentives, and the competition among state entities for them, are said to have revived a light metals industry, which was all but extinct ten years ago.[441] Foreign investors are required to "buy Cuban," requirements that in the production of hotel elevators, have led first to Cuban assembly plants, then to parts manufacture, and now to the manufacture of the final product. Ten years ago, less than ten percent of hotel equipment was made in Cuba; that figure reaches 50 percent today.

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433. *See* ECONOMIC COMMISSION FOR LATIN AMERICA AND THE CARIBBEAN, UNITED NATIONS, ECONOMIC SURVEY OF LATIN AMERICA AND THE CARIBBEAN, 1996-1997 (1998), at 197-203 [hereinafter ECONOMIC SURVEY].

434. *See* Gordon, *supra* note 41.

435. *See supra* text accompanying note 59.

436. *See supra* text accompanying note 255

437. *See* Carmelo Mesa-Lago, *Assessing Economic and Social Performance in the Cuban Transition of the 1990s*, 26 WORLD DEVELOPMENT 5 (1998), at 867-870. This employment figure does not include the significant number of individuals engaged in, and the significant income derived from, unregulated employment and the black market. *See id.* at 870.

438. *See id*. at 865.

439. *See* ECONOMIC SURVEY, *supra* note 433, at 197-203.

440. *See* Interview with Vazquez, supra note 129.

441. *See* Interview with Monreal, *supra* note 69 (commenting on the production of Hotel equipment in Cuba).

These movements noted, Cuba still faces large dinosaurs of state-owned enterprise, none so large and intractable as agriculture. It now has 156 government-owned sugar mills, with aging equipment and few environmental controls, producing only 4 million tons of sugar a year.[442] By contrast, seven mills alone in Florida produce 1.8 million tons a year. The most obvious solution would be to close 100 plants, invest in modernizing the rest, and dedicate fifty-percent or more of the lands to different uses. The most obvious problem is that an industry that employs 400,000 workers would now employ only 85,000. The challenge here is not simply to apply best environmental management practices to sugar production, but to find new uses for nearly half the productive land in Cuba and a third of a million workers. These are issues of a very large scale.

Cuba knows that it must restructure its economy and is moving, albeit with some ambivalence, in the direction of limited, free market capitalism. This capitalism raises many of the old problems such as income inequalities, the erosion of social values, dominance by foreign banks and capital[443] that influenced the revolution of 1956, but it seems certain that the genie is now out of the bottle. Cuba is now engaged in the same high-wire tightrope act of balancing political control with a rising free market seen with Glasnost in the Soviet Union a decade ago, as well as in China and Vietnam today.[444]

As capitalism evolves, the presence of private actors and private responsibility opens the door for the application of environmental law both through economic sanctions and incentives, and the ultimate trump card, injunctions. It also brings with it tremendous pressures for unsustainable development and consumption that have swept Latin America and, indeed, the world.[445] Whether environ-

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442. *See id*. (commenting on sugar production in Cuba).

443. *See* Mesa-Lago, *supra* note 437, at 873-74.

444. *See* Castañeda and Montalván, *supra* note 397, at 157. "The disasters that have happened in the countries of the Soviet Union . . . compared to the impressive successes of China and Vietnam, clearly indicate what we can and what cannot be done if one wants to save the revolution and socialism." FINANCIAL TIMES, Nov. 27, 1995, at 4 (quoting Fidel Castro from July 26, 1995).

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> [M]any of the economic emergency measures introduced during the special period convey grave threats to the environment. Particularly alarming are those associated with the development of the mining and tourist industry. The Castro government, in its zeal to promote the development of the latter sector, appears to be repeating the same mistakes responsible for the ecological deteriorating of most insular Caribbean countries.

Diaz-Briquets and Perez-Lopez, *supra* note 395, at 290 (quoting National Pubic Radio, 1995). These same pressures, riding a wave of "free market capitalism," have led to widespread

mental law can rise to the occasion is the question it confronts everywhere, and has nowhere been answered in full.

XI. POLITICS AND LAW

> It is necessary to implement the exercise of the right to a healthy environment that guides the Law, and of other rights associated with this, as the right to information, and the right to participate in decision-making processes. It implies a necessity to revise some legal texts . . . and it is worth noting that in other countries the solution has risen to the constitutional level, by means of the introduction of certain citizens' actions in the Fundamental Law.[446]
>
> Orlando Rey Santos, CITMA

Environmental law confronts politics every day of its life. No country is free from political influence over environmental decision-making, and even the United States has seen public employees censured, transferred and fired outright for having taken an "environmental" stand.[447] Members of the United States Congress regularly pressure environmental agency personnel with budget and personal reprisals for infringing on pet projects within their districts,[448] and for much of the 1980's both the President and his cabinet openly opposed the very environmental laws that, under the Constitution and numerous federal statutes,[449] they were charged with carrying out. The interface between politics and environmental protection is even more precarious in Latin America, where environmental leaders have been physically harassed, charged with treason and even killed,[450] and where the employment of someone opposing a government-favored project may be equally short-lived.

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looting of natural resources in the former Soviet Union. *See Morning Edition* (PBS broadcast, May 12, 2000).

446. *See* Interview with Orlando Rey Santos, *supra* note 392.

447. *See* Houck, *supra* note 290, at 882, n.40 (documenting hostility towards, intimidation of, and lawlessness against federal resource managers).

448. *See id*.

449. For a discussion of the role of politics in U.S. environmental policy under the Reagan administration, see LASH ET AL., *supra* note 42. *See also* TODD WILKINSON, SCIENCE UNDER SIEGE (1998) (describing more recent political undermining of federal conservation programs).

450. *See* Steven Green, *Venezuela Persecutes Activists*, MARMAM, Feb. 9, 1995 (describing extradition hearing for Venezuelan biologist for treason, for having videotaped Venezuelan fisherman killing dolphin). *See also Chico Mendez, Una Lucha En Defense De La Vida*, 2 REVISTA

It is not sufficient, therefore, to simply note that politics will play a strong role in Cuban environmental policy, because this is true in every country. What is different in Cuba is the monolithic strength of politics, coupled with the shortage of those elements, found in at least rudimentary form elsewhere in the Americas, that serve to keep outright and unlawful political influence in check. The most important of these controlling elements include free press, multi-party politics, nongovernmental organizations, and a rule of law.

In Cuba, such institutional safeguards are limited by a philosophy at the core of the Cuban Constitution that the government *is* the people, its organs are those of the people, and thus other institutions are superfluous.[451] There is no need to check-and-balance a system that is of the people and working only for the public good. The concomitant limitations, particularly on press and politics, are reinforced by Cuba's perception that it is on the receiving end of an economic, political, and, at times, armed war from the United States, legitimizing the suppression of dissent.[452] As naïve as Cuba's view of governance may appear in the abstract, it certainly finds parallels in the positions of agency heads and industry magnates in all countries, convinced that they know what is best for the nation and that no further inquiry is necessary. Environmental law challenges that mindset frontally, from its requirements for environmental impact analysis on up the chain. The question in Cuba is the extent to which environmental law will affect its system of governance, already reacting to the strains of free market initiatives and the uncertainties of a post-Fidel Castro world.

Perhaps the first notion to clarify is the extent of the Cuban monolith. In political life the authority of the Communist Party is apparently total, but government life proceeds in much the same fractious, internecine, argumentative and compromising way that characterizes all governments. Where enactments of environmental law are concerned, the best evidence is that interactions among government personnel and institutions are freewheeling and produce significant changes in original proposals.[453] Ultimately, confrontations over major policy issues or particularly controversial

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MEDIO AMBIENTE Y TRABAJO, Mar. 1999 (honoring the memory of Chico Mendez, who fought for agrarian and environmental reform, and who was assassinated on December 22, 1998).

451. *See* D. EVENSON, *supra* note 44, at 14-40.

452. *See El Imperioalismo Norteamericano Bombardea a Cuba*, PRENSA OBRERA, Nov. 6, 2000 (describing U.S. attack on Cuban policies and government).

453. *See* Interview with Orlando Rey Santos, *supra* note 392 (describing the lengthy negotiation process preceding the enactment of Law 81).

permits may indeed be settled by the Communist Party and outside of the government box.[454] However, if the lawmaking and implementation record described earlier in this article is any measure, there is a considerable free-fire zone within Cuban government on environmental decision-making. With this understanding, the elements of society and governance important to, and most likely to be affected by, Cuban environmental law are non-governmental organizations and administrative and public law.

A. Non-governmental Organizations

At least three kinds of non-governmental organizations are found in Cuba. The first to emerge, from the outset of the revolutionary government, were the mass organizations of popular power: the Organization of Cuban Trade Unions, the Federation of Cuban Women, and National Association of Small Farmers, separate organizations for students at the secondary school and university level, and local Committees for the Defense of the Revolution (CDRs).[455] These organizations were conceived of as a way of infusing public opinion into decision making, controlled by a close but informal relationship with the Communist Party. As noted earlier, they were explicitly authorized in the Constitution of 1976 and were granted significant rights, including that of proposing and reviewing proposed legislation.[456] Membership in these organizations, while not mandatory, may have significant personal and professional consequences.[457] The organizations with the most direct relationship to the environment are the CDRs, which have evolved from an original role in civil defense-cum-loyalty police to include significant social work at the local level, such as literacy campaigns, public health and immunization, and environmental education and reforestation.[458] While the connection of these groups to government precludes any expectation of their becoming an independent voice for environmental protection, they do constitute vehicles for environmental education and the implementation of government environmental policy at the grassroots level.

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454. *See infra* text accompanying note 466.

455. *See* D. EVENSON, *supra* note 44, at 23; Bethell, *supra* note 4, at 105-6, 127-29.

456. *See* D. EVENSON, *supra* note 44, at 23.

457. "Membership in the mass organizations in the 1980's had become a prerequisite for a successful life in Cuba. Responsible positions were open only to those who were integrated into the revolutionary process by their membership in one or more such organizations." Bethell, *supra* note 4, at 128.

458. *See id.* at 127. *See also Workshop, supra* note 11, at 38-39 (describing a range of CDR environmental activities, primarily with local communities in rural areas).

A second set of groups is rooted in Cuba's deep tradition in the sciences and the association of these scientists in government research centers and institutes across the country. Several of these organizations, such as the Cuban Speleological Society, long predated the revolution and others, like the National Academy of Sciences, were launched by revolutionary leaders from academia.[459] They operate with official sanction, but on their own initiatives and resources. The Cuban Zoological Society, by way of illustration, has its own budget, elects its own officers and directors, sets its own program, and holds well-attended, annual symposia on a wide range of environmental issues, some highly technical, others involving research with findings critical of specific government proposals and programs.[460] The orientation of at least some of these societies is frankly environmental. In fact, the motto of the Cuban Zoological Society is "[t]o preserve the collections of natural history, an obligation for future generations."[461] In the aggregate, these societies provide a separate base of highly informed citizens involved in environmental issues and organized with at least functional independence from the Cuban government.

Environmental citizen groups form a last category of non-governmental organizations and, in most regards, resemble their counterparts in other countries.[462] Social organizations of this nature

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459. *See supra* text accompanying note 2. Additional scientific societies include the Thomas Roig Scientific Society, The Felix Varela Center, Cuba-Solar, the Society of Ocean-Sciences, the Geography Society, and the Meteorology Society. *See* Moreno and Santos, *supra* note 120, at 26.

460. *See* INSTITUTE OF ECOLOGY AND SYSTEMATICS, CITMA, FOURTH SYMPOSIUM ON ZOOLOGY (Nov. 1997).

461. *See id.*

462. For a discussion of Cuban non-governmental organizations generally, albeit circa 1994, *see* Gillian Gunn, *Cuba's NGOs: Government Puppets or Seeds of Civil Society?*, GEORGETOWN UNIVERSITY CARIBBEAN PROJECT (Feb. 1995), <http://sfswww.georgetown.edu/sfs/programs/clas/Caribe/bpt.htm> (concluding that Cuban NGOs were both puppets and seeds, and quite different in their operations and degree of independence). As of 1994, approximately 2,200 NGOs were registered in Cuba, ranging from the mass organizations of popular power, to the Union of Writers and Artists of Cuba, to ProNaturaleza. Cuban Law 54, promulgated in 1985 on "Associations and their Regulation" requires NGOs to register a statement of goals and organizational structure; list the names of at least thirty members and the names and addresses of its leadership; demonstrate that it will be self-financing and the absence of an NGO with the same purpose; and obtain the sponsorship of a "state reference institution," with the right to attend meetings and impact the organization's records. *Id*. at 3, 4. Apparently, these requirements are implemented with considerable variability. *Id.* at 4. Further, of the more than two-dozen NGO's interviewed in the course of the referenced study, "none had ever had their board meetings attended or their books visited by a state reference institution." *Id*. at 5. Nevertheless, the potential for state intrusion is far greater in Cuba than that by, for example, the filing and information requirements of the United States Internal Revenue Service for charitable organizations under 26 U.S.C § 501(c)(3). *See id.*

are recognized by the constitutional revisions of 1992,[463] which granted the rights to their own budgets, property and management.[464] These groups are also exempted from income taxes and are authorized to engage in such mission-related businesses as the sale of periodicals, books and merchandise.[465] Two of the largest such organizations are ProNaturaleza and the Foundation for Nature and Man, although other, smaller and often issue-specific environmental groups are emerging as well. ProNaturaleza claims 5,000 members in Cuba, with chapters in each of the 14 provinces.[466] It is the closest organization in Cuba to an environmental watchdog, lobbying on legislation, organizing action-oriented conferences, reporting violations of laws, and at times, directly opposing government proposals, with some reported success.[467] The Foundation for Nature and Man is not a membership organization in the same sense; it is rather an organization with some twenty-six employees located in Havana and six regional cities dedicated to specific environmental projects and to the publication of a national newsletter.[468] The Foundation's projects include urban gardens and greenspace, watershed planning, improved agricultural practices and action-alerts on current issues. Originally funded from the estate of Antonio Nunez, the Foundation receives additional revenue from publications and from foundations in Canada, Italy and other countries.

In sum, Cuba has a nucleus of non-governmental organizations, with variable independence from politics and the Communist Party, available to perform the role of outside expert and critic that has

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463. *See* CUBAN CONST., *supra* note. 64

464. *See* CUBAN CONST., *supra* note 64, Art. 22.

465. *See* Gunn, *supra* note 462.

466 Interview with Armando Fernandez, Investigator, Foundation for Nature and Man (March 22, 2000); interview with Liliana Nunez, Vice President, Foundation for Nature and Man (June 2000). The majority of Pro-Naturaleza's numbers and of its leadership are employees of CITMA and its associated institutes and research stations; this employment places Pro-Naturaleza in a "whistleblower" role on projects of concern to them and to the agency, somewhat as the Association of Forest Service Employees for Environmental Ethics and similar groups operate within federal agencies in the United States. Access to the web has made this "whistleblowing" easier, as it can be done anonymously. Interview with Dalia Acosta, Reporter, Spanish News Service, Havana, Cuba (June 2000).

467. *See* Evenson, *supra* note 108, at text accompanying note 201-4 (describing ProNaturaleza's success in opposing hydro-electric development). *See also* Gunn, *supra* note 462, at 9 (describing ProNaturaleza success in resolving a case of illegal woodcutting by arranging for alternate fuel from the local government); Interview with Teresita Telleria, Vice President, Pro-Naturaleza (June 2000) (describing successful opposition to a proposed coastal development).

468. *See* Interview with Armando Fernandez, *supra* note 466. *See also* Interview with Liliana Nunez, *supra* note 466.

emerged, worldwide, as an indispensable ingredient to successful environmental policy. One cannot overstate the importance of these groups in public education; environmental permitting, monitoring and compliance; dialogue with government and industry; media information; and daily vigilance. One of CITMA's challenges will be to break itself from the insular traditions of a bureaucracy and develop these groups as active constituencies, even at the pain of their criticism and dissatisfaction with the pace of progress and with particular agency decisions.[469] This same challenge is of course faced by environmental agencies in Louisiana and elsewhere, not always with good humor or success.

B. Administrative and Public Law

> In fact, the recognition of a right to a healthy environment, opens the door to legal actions for environmental harm, even without the plaintiff having received direct injury to his person or property, including the undertaking of collective actions.[470]
>
> Orlando Rey, CITMA

Consider the implications of this statement. If there is a challenge greater than involving citizens and the general public in environmental decision-making, it is the empowerment of these groups in law. The world of 2000 is full of vigorous-sounding environmental laws, many of which are not put into practice in more than a perfunctory manner. The great innovation of environmental law in the United States was not only its substance, which by now has been mirrored in most countries, but also its process: public access to information, public participation in decision-making, and judicial review. If the relative strength of environmental organizations is one good indicator of the success of environmental policy in any given jurisdiction, then the presence or absence of these administrative processes is an equally good one.

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469. For an example of CITMA's cautious approach to independent citizen organizations, see Statement of Orlando Rey Santos, Director of Environmental Policy Directorate, CITMA, *supra* note 217 (placing primary reliance on the organizations of popular power for public participation in the environmental impact review process).

470. *See Profile*, *supra* note 29, at 46.

Day-to-day environmental decision making is administrative: the scope and adequacy of environmental analysis, for example, emissions standards for a discharge permit, observance of a set-back line from coastal vegetation, or access to a biological reserve. These are not decisions of legislators but of agency employees who are under heavy pressure from applicants, other agencies and at times their own superiors to expedite the approvals, downplay adverse impacts, and cut a deal. They operate under the shadow of knowing, further, that any decision adverse to a private interest can be, and probably will be, administratively and judicially appealed. Bad environmental decisions are not made by bad people; they are made by people seeking to appease their superiors and stay out of trouble.

One successful way to offset these otherwise overwhelming pressures has been to empower environmentalists as a counter-force. This empowerment begins with legal requirements for public notice, information, and genuine participation in decision-making. It ends with the most sensitive subject of all: judicial review.

The process is new to Cuba. The Cuban Constitution, as noted earlier, requires the state to protect the environment and contribute to the "achievement of sustainable development," and declares it to be the duty of citizens to contribute to this protection. Article 4 of Law 81 interprets sustainable development to mean that the state "establish and facilitate the necessary means and guarantees to protect the right to a sound environment in an adequate and timely manner";[471] that these obligations "constitute a responsibility of all national and local state agencies and bodies within their jurisdiction";[472] that "every person must have adequate access, in conformance with established legal requirements, to all available information in the possession of state agencies and bodies regarding the environment";[473] that "public knowledge of environmental actions and decisions and consultation with the public will be assured in the best manner possible, but in every case must occur";[474] and that "*every natural or legal person, as authorized by law, must have adequate and sufficient access to administrative or judicial means to demand compliance with this Law*," and with subsequent, implementing laws.[475]

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471. *See* CUBAN CONST., *supra* note 64, art. XXVII.
472. Law 81 art. 4(f).
473. *Id*. at (e).
474. *Id*. at (k).
475. *Id*. at (*l*) (emphasis added).

On their face, the scope and lack of ambiguity in these provisions would be impressive for any law. For Cuba, the right to all governmental environmental information (and nearly all environmental information in Cuba is governmental); the right to know of government actions in advance and to be consulted on them; and most of all, the right to access administrative and judicial bodies to demand compliance with law is revolutionary.[476] If, and this is a huge "if," it can be enforced.

The inquiry now reaches the unknown: the extent to which Law 81 and its daughter laws will open up the administrative and judicial process to review of agency decision making. The first part of this inquiry is whether Cuban civil courts have the jurisdiction to review the lawfulness of government environmental decisions. The Cuban Code of Civil Procedure,[477] similar to the codes of many countries and the Administrative Procedure Act of the United States,[478] expressly provides for judicial review of actions that are final and when administrative remedies have been exhausted. The Code proceeds to list certain subjects as exempt from judicial review, but environmental issues, — perhaps, felicitously, because they post-date the Code — are not listed.[479] A literal reading of the Code, then, would recognize a right of judicial review.

The second half of the inquiry is to understand exactly who may exercise this right, the question of "standing to sue." Traditionally, an industry denied an environmental license or an individual who's property was harmed by its issuance would have the requisite interest. Not so certain are the interests of those individuals and organizations that seek to prevent environmental injury in the future, from an allegedly unlawful government act.

The scope and nature of the injury necessary for standing to sue is, in all countries, one of the hottest topics in administrative environmental law. It can be said with some confidence, however, that from jurisprudence historically narrow in confining these interests to those suffering financial or physical injury, both Latin American and European civil code jurisdictions are trending rapidly towards the acceptance of expanded standing, in some cases more expansive

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476. For a discussion of Cuba's resistance to the concept of judicial review, although more open to the expansion of public participation, see D.EVENSON, *supra* note 44, at 79. For a discussion of public participation in Cuba through complaints about government conduct to local-elected deputies, see Bethell, *supra* note 4, at 134.

477. *See* Law of Civil, Administrative and Labor Procedure, art. 654 (on file with author).

478. *See* Administrative Procedure Act, ch. 324, 60 Stat. 237 (1946) (current provisions in Revised Title at 5 U.S.C. §§ 551-59, 701-06, and other sections).

479. *See* Law, *supra* note 477 at art. 657.

even than that found in the United States,[480] and are allowing judicial review for prospective, environmental injury on the part of individuals and environmental organizations.[481] In 1998, the Chilean Supreme Court, on behalf of several individual legislators who represented districts remote from the project site, enjoined a massive logging project for failures in the licensing process.[482] That same year the Supreme Court of Greece allowed the Hellenic Ornithological Society to challenge an environmental impact analysis for one of the largest public works projects in the country.[483] In 1999, the Supreme Court of Russia granted review of a citizen suit and revoked an oil lease for failure to conduct the required environmental impact analysis at all.[484]

The Cuban Law of the Environment confers primary environmental law enforcement responsibilities on CITMA, in conjunction with the Attorney General and related ministries.[485] In Article 71, it further confers on CITMA, the Attorney General, or any other person or entity that has "personally suffered" damage to claim both money damages and restoration for environmental harm.[486] The same article provides, however, that only the first two entities, CITMA and the fiscal, may "act in defense of the social interest in environmental protection."[487] It is unclear whether Article 71's limitations on standing by private individuals will be interpreted as only limiting claims enumerated in Article 71, such as those for money damages

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480 *See* leading U.S. cases on standing to sue for environmental groups, including *Sierra Club v. Morton*, 405 U.S. 727 (1972); *Friends of the Earth v. Laidlaw*, 528 U.S. 167 (2000).

481 *See* NAVIA, *supra* note 103 at 94-143 (describing rise of citizen enforcement in Latin America); *see also* Her Majesty's Inspectorate of Pollution and Ministry of Agriculture, Fisheries and Food v. Greenpeace, Ltd., 4 All Eng. 321, 349-51 (1994) (Ottan, J.) (granting environmental organization study to challenge radioactive waste discharge); Douglas L. Parker, *Standing to Litigate Abstract Social Interests in the United States and Italy: Reexamining Injury in Fact*, 33 COLUM J. TRANSNAT'L L. 259, 284-98 (discussing Italian law provisions granting standing for environmental groups).

482. *See* C. Suprema, Rol No. 4.658-96, Gazeta Jurídica (Mar. 19, 1997) (injunction ordered by Chile Supreme Court). *See also* "Kattan," Juzgado N°. 2 105 E.D. 246 (1983) (federal court of Argentina) (both cases on file with author).

483. *See* Hellenic Ornithological Society v. Minister of National Economy and Tovista (Acheloos). No. 2759 (Greece 1994).

484. *See Russia Today* (National Public Radio broadcast, May 12, 2000).

485. *See* Law 81 at Art. 12.

486. *See id.* at art. 71. An earlier draft of Law 81 also provided expressly for class actions and for joint liability on behalf of private parties; these provisions were dropped from the final version. *See* F. Evenson, *supra* note 80 , at text accompanying n.270, 1.

487. *Id.* The earlier draft of Law 81 also provided for private actions for plaintiffs exercising their rights to a healthy environment; this provision too, was deleted in the final law. *See* F. Evenson, *supra* note 80, at text accompanying n.269. It is unclear from the description whether the deleted provision referred to private, compensatory or to public, non-economic claims.

and restoration of environmental harm already done, or whether they will limit relief for harm *anticipated* from governmental actions such as inadequate impact analyses, permits that exceed regulatory requirements, or violations of public law. One way to read Article 71 is that it intends to exclude this relief for private plaintiffs. An opposite interpretation is that Article 71, by its very title, speaks only to civil liability, that is to say to damages and restoration, and not to review of prospective harm. This latter interpretation is supported by the unambiguous statement in Article 4, that every person "must have adequate access to administrative *and judicial* means" to demand compliance with this and other environmental laws.[488] Under this view, Law 81 limits private monetary relief for past harm, but Law 81 does not limit, indeed it guarantees, judicial review to enforce compliance with law.

The resolution to this important question may be years in the making. It was certainly years in the making in the United States, which only opened its courts to citizen enforcement of public law in the 1960's,[489] and to expanded citizen standing in the 1970's.[490] As discussed earlier, CITMA has seen fit to provide administrative review of its environmental impact and licensing decisions within the agency on behalf of the applicant, but has yet to confer the same right on citizen groups;[491] it has further deferred its required regulations for public participation to later rulemaking.[492] On the other hand, neither door is closed and the Director of CITMA's Office of Environmental Policy is on record as recognizing the need to implement the exercise of these public rights.[493] Meanwhile, as also discussed earlier, Cuba has created special tribunals to provide judicial review for economic and environmental cases.[494] Whether and how CITMA goes forward to provide administrative review for public organizations, and whether the courts will accept review and participation in appeals from these organizations, will go a long way to test Cuba's commitment to the implementation of its new

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488. *See id.* at art. 4(*l*).

489. *See* Administrative Procedure Act, *supra* note 478.

490. *See* Scenic Hudson Preservation Conference v. Federal Power Comm'n, 354 F.2d 608 (2d Cir. 1965) (establishing a public right of standing), *cert. denied*, 385 U.S. 941 (1966).

491. *See supra* text accompanying notes 216-7.

492. *See supra* text accompanying notes 212-7.

493. *See supra* text accompanying note 446.

494. *See supra* text accompanying note 59.

environmental laws, and to separate Cuba from the flock of countries in which these rights are not available.[495]

As important as these developments are to the achievement of Cuba's environmental policy, they could have equally significant effects on Cuban governance as well. Many governments view public participation as a threat, limit access to environmental information, and provide little or no judicial recourse. One might have thought that Cuba would lead this pack. It may not, and the shape of Cuban decision-making will change to the extent it adopts more expansive concepts of administrative environmental law. There is still the Party, but now there are also the courts and the seeds of a rule of law. Though it has not happened yet, Law 81 and its daughters open the door to these potentially large consequences.

XII. CONCLUSION

> The simple truth is that a free flow of American goods is more likely to rout communism in Cuba than the same strategy in China …. The island is so small and so close that Castro's regime would be unlikely to withstand a full frontal assault from American culture and consumer goods. Mickey Mouse and McDonald's are among the most powerful weapons in America's arsenal. Let's send them in.[496]
>
> Cynthia Tucker

Cuba has made a commitment to environmental protection. It has begun to effectuate this commitment through law. The laws are incomplete and the mechanisms to implement them more so, but they are irrefutably under way.

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495. To be sure, expanded rights of public participation and judicial review are no guarantee of decisions favoring environmental protection or the sustainable use of natural resources. The general public in Cuba, much as the general public in Louisiana, for example, may care little about environmental protection or sustainability. Judicial review may, too, turn hostile to environmental protection even when this protection is mandated by public laws. *See* Oliver A. Houck, *Environmental Law and the General Welfare*, 16 PACE L. REV. 1 (1998) (describing "deconstruction" of environmental law by recent federal court decisions). These results will be all the more likely in countries with no tradition of citizen participation or an independent judiciary, or those that offer administrative and judicial review exclusively to economic interests. Unless the scales of public law are balanced, they do not work. *See id.*

496. Cynthia Tucker, *Mickey Mouse Will Bring Castro Down*, THE TIMES PICAYUNE, June 1, 2000, at B-7.

The emerging laws may not comport with United States standards, but the incredible geometry of the Clean Air Act and the high-powered warfare conducted over proposed environmental regulation in the United States and Europe are not necessarily the Gold Standard for all nations to follow. Further, it may be just a little presumptuous for the United States, whose practices of resource consumption and waste lead the world, to sit in judgment on the efforts of any other country towards sustainable development. Cuba's laws may fail, but they may also lead to practices that have a far more balanced impact on the earth than those of their neighbors. It is too early to say.

What may be surprising, or even be believed, is that the Cuban government would undertake such a journey in such severely difficult economic times. A large and experienced cadre of scientists in Cuba has been driving in this direction for decades, and it has caught the imagination of the Cuban leadership.

The movement may prove to be transitory, though the idea of caring for the land goes back at least to the days of Jose Marti. The revolutionary government of 1959 and its mega-programs paid little heed to the environment, but neither did the programs of any country until very recent years, and the state-owned system of Cuban enterprise has been changing rapidly since 1992. The movement may prove to be illusory, as are the environmental programs of many countries, but as of this date there is no reason yet to conclude that it will. The best evidence indicates that the responsible agency, CITMA, is in there trying, accompanied by a fair measure of political support, while other ministries and institutions are coming on board.

The immediate next question is the implementation of this new body of law, which will require more law and more changes than perhaps were originally contemplated or bargained for. These measures include enforcement and incentives, as well as two, time-proven ingredients for effective environmental policy: public participation and independent judicial review. If, and as, they emerge, these measures could create new modes of decision-making and a rule of law. This outcome is by no means assured, but it is a very real possibility.

In the future, and perhaps even the near future, Mickey Mouse is sure to arrive, bringing with him the aptly predicted "full frontal assault" of American culture and consumer goods. At that point, the presence of a functioning system of environmental protection supported by an involved public and effective public law will be critical. Lea dership, funding and political support for CITMA will be

no more a given in the future Cuba than they are for the Environmental Protection Agency in the United States. The money for exploiting anything of value in any fashion will be enormous. However far away that day is, Cuba has just that much time to get its environmental act together, and little more.