

KEY ENVIRONMENTAL LEGISLATION FOR CUBA'S TRANSITION PERIOD

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1. INTRODUCTION

There is a growing body of literature that addresses the environmental problems that Cuba faces today and which most likely will, in similar or aggravated form, be present when the country makes its transition to a free-market, democratic society. Likewise, the environmental legislation that has been enacted in Cuba to date has also been the subject of some analysis. Relatively little attention, however, has been given to the need that will develop during Cuba's transition for suitable legislation to provide environmental protection and remediation of the environmental damage already sustained. There has also been little analysis of the inevitable tradeoffs between environmental needs and the political and economic realities of the transition, and between the potentially inconsistent goals of stimulating economic growth and addressing the environmental needs of the country.

It is important to note that, in addressing environmental issues, the legislators will not be writing on a clean slate during Cuba's transition. Socialist Cuba possesses today a fairly extensive, although ineffective in practice, legal framework for environmental protection. One of the challenges of a transition government in the environmental arena will be to decide how much of the existing apparatus can be retained, with or without modifications, as a point of departure for future environmental legislation.

This Article represents a modest attempt at addressing these issues. The task is as daunting as it is important. Like a snake bit-

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Unless otherwise noted, all translations are the author's.

ing its own tail, the health of the environment is inseparable from the prospects for Cuba's economic growth and well-being; on the other hand, environment and development are likely to compete in the short term for governmental funds and legislative priority. This Article does not seek to resolve those fundamental issues but only to offer suggestions for potential compromises between conflicting sets of legitimate priorities.

2. SUMMARY OF CUBA'S CURRENT ENVIRONMENTAL SITUATION

2.1. *Introduction*

Cuba is experiencing serious environmental degradation in a number of areas. Soil degradation, water contamination, industrial pollution, and the threat to natural habitats and bio-diversity are primary environmental concerns, although others (e.g., urban decay, poor sanitary conditions, and air pollution) are also important problems. This section will provide a brief description of the areas in which Cuba's environmental crisis is most acute.¹

2.2. *Main Categories of Environmental Problems Currently Being Encountered*

2.2.1. *Soil Loss and Degradation*

The agricultural methods used in Cuba for most of the period since the triumph of the Revolution have led to significant soil

¹ The discussion in this section is not intended to be comprehensive. For a fuller account of the environmental situation in Cuba see, for example, REPÚBLICA DE CUBA, MINISTERIO DE CIENCIA, TECNOLOGÍA Y MEDIO AMBIENTE, CONSULTA NACIONAL RÍO +5, TALLER "MEDIO AMBIENTE Y DESAROLLO" (1997); SERGIO DÍAZ-BRIQUETS & JORGE PÉREZ-LÓPEZ, CONQUERING NATURE: THE ENVIRONMENTAL LEGACY OF SOCIALISM IN CUBA (2000) [hereinafter LEGACY]; JOSÉ R. ORO, THE POISONING OF PARADISE: THE ENVIRONMENTAL CRISIS IN CUBA (1992); CARLOS WOTZKOW, NATUMALEZA CUBANA (1998); María Dolores Espino, *Environmental Deterioration and Protection in Socialist Cuba*, in CUBA IN TRANSITION: PAPERS AND PROCEEDINGS OF THE SECOND ANNUAL MEETING OF THE ASSOCIATION FOR THE STUDY OF THE CUBAN ECONOMY 327 (1992); Agencia Ambiental Entorno Cubano ("AAMEC"), *Informe Annual de la AAMEC: Situación Ambiental de Cuba, 1997* (visited Mar. 24, 2000) <<http://members.xoom.com/aamec/informes.htm>> [hereinafter AAMEC].

loss and degradation.² These methods are the result of an agricultural production philosophy imported from the former Soviet Union, in which the emphasis was on increased production of agricultural commodities by devoting large parcels of land to cultivation, extensive irrigation, and the use of heavy mechanical equipment (which results in increased soil compaction) for soil preparation, planting and harvesting.³ In addition, the Cuban government, in an effort to increase agricultural production, has sought to reclaim low-quality soils that are prone to erosion.⁴ This practice has caused a loss of forested areas, which in turn has made some regions more susceptible to flooding.⁵ Soil loss through erosion and flooding has become one of the most serious problems affecting the environment and the agricultural industry in Cuba.

Cuba has roughly eight million hectares of arable land, of which about half suffers from erosion in one way or another.⁶ The provinces on the island most affected by soil erosion are Guantánamo and Camagüey, where eighty percent and seventy-five percent of the soil, respectively, is affected by erosion.⁷ The economic and environmental impacts of such degradation are significant.⁸

Salinization also plagues Cuba's soil, especially in the eastern provinces, but the problem also has surfaced in the southern

² See LEGACY, *supra* note 1, ch. 4; Sergio Díaz-Briquets & Jorge Pérez-López, *The Environment and the Cuban Transition*, in CUBA IN TRANSITION: PAPERS AND PROCEEDINGS OF THE SEVENTH ANNUAL MEETING OF THE ASSOCIATION FOR THE STUDY OF THE CUBAN ECONOMY 488, 489 (1997) [hereinafter *Environment and Transition*]; Aldo M. Leiva, *Promoting and Financing the Development of an Environmental Infrastructure in a Post-Castro Cuba*, in CUBA IN TRANSITION: PAPERS AND PROCEEDINGS OF THE EIGHTH ANNUAL MEETING OF THE ASSOCIATION FOR THE STUDY OF THE CUBAN ECONOMY 85, 86 (1998); Héctor Sáez, *Property Rights, Technology, and Land Degradation: A Case Study of Santo Domingo, Cuba*, in CUBA IN TRANSITION: PAPERS AND PROCEEDINGS OF THE SEVENTH ANNUAL MEETING OF THE ASSOCIATION FOR THE STUDY OF THE CUBAN ECONOMY 472 (1997).

³ See LEGACY, *supra* note 1, at 4:19-40; *Environment and Transition*, *supra* note 2, at 489; Sáez, *supra* note 2, at 474-77.

⁴ See *Environment and Transition*, *supra* note 2, at 489.

⁵ See *id.*

⁶ See AAMEC, *supra* note 1, at 1. Other estimates suggest that up to 90% of the agricultural land in Cuba is affected by erosion. See LEGACY, *supra* note 1, at 4:20.

⁷ See AAMEC, *supra* note 1, at 1.

⁸ See *id.* at 2.

coastal areas of La Habana and Pinar del Río and in the Ciego de Avila province.⁹ Salinization occurs primarily from the excessive extraction of ground water near the coast, which drops the water table and allows salt water to penetrate the aquifer and ultimately seep into soil. This leads to lower crop yields and often renders the land unusable.¹⁰ It has been reported that two million acres of farmland suffer from severe salinization, a situation that imperils both the current yield and the economic potential of the agricultural industry.¹¹ The reduced productivity of the affected lands means a potential long-term decrease in agricultural production and the loss of jobs for farming communities.¹²

2.2.2. *Water Pollution*

Water pollution is rampant in Cuba. As mentioned in the preceding section, an accelerated rate of water extraction from aquifers for irrigation has led to the intrusion of seawater into the aquifers increasing the salinity of underground water reserves.¹³ Urban rivers are contaminated with, among other substances, raw sewage, various solid wastes, oils, cement, and detergents.¹⁴ Rural rivers are polluted with industrial and agricultural wastes, which damage vegetation downstream.¹⁵

The waters around Havana are some of the most polluted in the country. The Almendares River, which traverses Havana, is estimated to receive 19,315 cubic meters of waste daily, eighty percent of which is urban and the remaining is industrial.¹⁶ The oil refineries in Havana discharge lead and other petrochemical waste into Havana Bay, adding to the hydrochloric acid, greases, and fertilizers dumped into the bay daily.¹⁷ In Camagüey, the San

⁹ See *id.* at 1; *Environment and Transition*, *supra* note 2, at 489.

¹⁰ See *Environment and Transition*, *supra* note 2, at 489; LEGACY, *supra* note 1, at 5:22.

¹¹ See DAVID S. COLLIS, ENVIRONMENTAL IMPLICATIONS OF CUBA'S ECONOMIC CRISIS 6 (Georgetown University Cuba Briefing Paper Series, No. 8, July 1995) (citing THE GREENING OF THE REVOLUTION (Peter Rosset & Medea Benjamin eds., 1994)).

¹² See AAMEC, *supra* note 1, at 1-2.

¹³ See *Environment and Transition*, *supra* note 2, at 489.

¹⁴ See AAMEC, *supra* note 1, at 3.

¹⁵ See *id.*

¹⁶ See *id.*

¹⁷ See Rajendra Ramlogan, *Protection of the Environment in Cuba: Piercing the Caribbean Iron Curtain*, 29 U. MIAMI INTER-AM. L. REV. 37, 90 (1998).

Pedro River conveys the crude and untreated residue of seventeen factories and twelve slaughterhouses to the city's waterways.¹⁸ The Nuevitas Bay, north of Camagüey, also receives contaminants from various sources, which leave the bay polluted with sulfur, hydrochloric acid, lead, and hydrocarbons.¹⁹

Clearly, water pollution in Cuba poses a serious threat to the country as a whole. Almost every aspect of Cuban society is affected by water pollution through increased health risks, diminished quality of human life, costlier industrial processes, loss of aquatic wildlife, and potential loss of tourism revenues.

2.2.3. *Natural Habitat/Bio-diversity*

Cuban governmental policy and the economic crisis during the 1990s are responsible for the loss of the natural habitats of many endemic species.²⁰ Deforestation, illegal and indiscriminate hunting, water pollution, and the illegal capture for resale of exotic animals contribute to the natural habitat and bio-diversity problem in Cuba.²¹ The need for firewood, caused by the fuel shortage during the current economic crisis, has led to rampant deforestation, endangering ecosystems throughout the island.²² In addition, the government's own deforestation practices and uncontrolled use of pesticides and fertilizers have devastated natural habitats and bio-diversity.²³ In 1997, Cuban sources estimated that deforestation has helped account for the extinction of twenty species of birds native to the island.²⁴

Marine life has also been adversely affected by environmental degradation. Bays and coastal areas are polluted by untreated waste, industrial discharge, and agricultural runoff, causing damage to entire marine ecosystems, including coral reefs.²⁵ Moreover, there are reports that live coral reefs are being extracted

¹⁸ See AAMEC, *supra* note 1, at 3.

¹⁹ See *id.* at 4.

²⁰ See *id.* at 6.

²¹ See *id.*

²² See *Environment and Transition*, *supra* note 2, at 489; Ramlogan, *supra* note 17, at 69.

²³ See Ramlogan, *supra* note 17, at 69.

²⁴ See AAMEC, *supra* note 1, at 6.

²⁵ See *Environment and Transition*, *supra* note 2, at 489.

from the ocean so that their calcium carbonate content may be used in nickel processing operations.²⁶

The government has constructed causeways that connect various keys and archipelagos to the mainland in an effort to promote tourism.²⁷ These causeways, however, prevent the free flow of inland and coastal waters, which increases the concentration of pollutants in certain marine areas and endangers marine and land ecosystems.²⁸

2.2.4. *Air Pollution*

Air pollution is a localized problem in Cuba because the main sources of pollution are industrial facilities and the automobiles and other internal combustion vehicles, which are present in relatively low numbers throughout the country.²⁹ Industrial air pollution, while a localized phenomenon, results in significant releases of contaminants, including carbon dioxide from plant operations, sulfuric acid from the burning of sulfur-containing oil, and dust, ashes, and other particulates from oil refineries, cement plants and nickel processing facilities.³⁰

2.2.5. *Tourism-Related Environmental Impacts*

In recent years, the tourism industry has played an increasingly important role in bolstering Cuba's economy.³¹ The poor performance of the agricultural sector, particularly the low sugar production in the last several years, has resulted in tourism becoming Cuba's main source of foreign currency revenue.³² The tourism industry has experienced exponential growth in the period from 1988, when fewer than 35,000 tourists visited the is-

²⁶ See *id.*

²⁷ See *id.* at 490.

²⁸ See *id.*; AAMEC, *supra* note 1, at 6.

²⁹ See *Environmental and Transition*, *supra* note 2, at 490.

³⁰ See AAMEC, *supra* note 1, at 6; *Environment and Transition*, *supra* note 2, at 490.

³¹ See Félix Blanco Godínez, *Cuba's Tourism Industry: Sol Meliá as a Case Study*, in CUBA IN TRANSITION: PAPERS AND PROCEEDINGS OF THE EIGHTH ANNUAL MEETING OF THE ASSOCIATION FOR THE STUDY OF THE CUBAN ECONOMY 50 (1998). For an acknowledgement by Cuban officials that the tourism industry is the most critical sector in the economy, see Irida Calzadilla Rodríguez, *El Turismo es el Corazón de la Economía*, GRANMA, Feb. 28, 1998, at 3.

³² See Blanco Godínez, *supra* note 31, at 50.

land, to 1999, when the number of tourists reached 1.7 million.³³ In 1999, international tourism gross receipts grew to over U.S. \$2.2 billion.³⁴ Increased tourism spurs economic activity in other industries such as transportation services, entertainment and culture, and retail sales on national goods.³⁵

On the other hand, the tourism industry is a growing source of environmental hazards. In the Varadero region, hotels have been built too close together and too close to the sea, creating an environmental threat of beach erosion and diminishing the natural beauty of the area.³⁶ Increased tourist trade means additional generation of trash and waste products and increased pressure on the ecological systems in the main tourist attractions areas.³⁷ Also, as noted above, the construction of causeways designed to promote tourism has increased water pollution and decreased biodiversity, threatening the tourism industry in the very areas to which the government seeks to attract tourists.

2.2.6. *Agriculture-Related Environmental Impacts*

The agricultural sector also suffers from environmental degradation and itself causes much of that degradation. As discussed above, efforts to boost agricultural production (for example, excessive irrigation, over-tilling, and herbicide and pesticide use) cause erosion, adversely affect soil fertility, and cause a variety of adverse environmental impacts.³⁸

Cuban authorities have taken some measures that tend to reduce the environmental degradation caused by agricultural production. For example, organic farming techniques have been implemented, the number of tillings per year has been reduced, and bio-fertilizers and bio-pesticides are being introduced.³⁹ Nonetheless, vast quantities of crops are lost each year because of the already existing problems, and the limited remediation practices instituted thus far are not likely to see widespread use due to lack of

³³ See Michelle Wallin, *Market Reforms Put Cuba Back on Growth Track, but Island Still Struggles to Pay Bills for Imports*, WALL ST. J., Dec. 6, 1999, at A25.

³⁴ See *id.*

³⁵ See Blanco Godínez, *supra* note 31, at 50.

³⁶ See COLLIS, *supra* note 11, at 7.

³⁷ See AAMEC, *supra* note 1, at 9.

³⁸ See *Environment and Transition*, *supra* note 2, at 489.

³⁹ See COLLIS, *supra* note 11, at 6-7.

government resources and the failure to assign a high priority to environmental recovery.

3. CUBA'S CURRENT FRAMEWORK FOR ADDRESSING ITS ENVIRONMENTAL PROBLEMS

3.1. *Introduction*

Cuba has in place a reasonably detailed legal framework for environmental protection. The obligation to protect the environment is vested on both the State and the citizenry by the Constitution. A first framework environmental law was enacted in 1981, and a new law became effective in mid-1997. Environmental legislation in Cuba consists today of treaties, laws and administrative regulations.⁴⁰ In addition, agencies have been created to implement the environmental laws and regulations. The primary environmental protection agency is the Ministry of Science, Technology, and the Environment ("CITMA"). CITMA replaced its predecessor, the Natural Commission for Protection of the Environment and the Rational Use of Natural Resources ("COMARNA") in 1994. Other government organs, including several ministries, retain environmental powers and responsibilities.

3.2. *Environmental Laws*

3.2.1. *Law 33 of 1980*

Cuba's initial environmental legal framework was founded on Article 27 of the Constitution of 1976.⁴¹ That article stipulated that all citizens and cognizant government agencies are to take measures to ensure a clean environment.⁴² Based on this broad

⁴⁰ For the texts of a number of national laws, decrees and other regulations applicable to Cuba's environment see TULANE LAW SCHOOL, CUBAN ENVIRONMENTAL LAW (Jerry Speir, ed.) (1999); Ramlogan, *supra* note 17, app. A; Tulane Institute for Environmental Law & Policy, *Cuban Environmental Law* (visited Apr. 1, 2000) <<http://www.law.tulane.edu/elp/institute/cubamain.htm>>.

⁴¹ CONSTITUCIÓN DE LA REPÚBLICA DE CUBA (1976) art. 27, in GACETA OFICIAL, at 7, 24 de febrero de 1976.

⁴² Article 27 of the 1976 Constitution provided: "To ensure the well-being of citizens, the State and society are the protectors of nature. It is incumbent

mandate, in 1981, the Cuban National Assembly passed the first environmental law enacted by Cuba's socialist government. Law 33, known as the "Law on Environmental Protection and the Rational Use of Natural Resources," remained Cuba's key environmental law for nearly two decades.⁴³

Law 33 provided an ineffective mechanism for addressing Cuba's serious environmental problems.⁴⁴ While the intent of Law 33 was to "establish the basic principles to conserve, protect, improve and transform the environment and the rational use of natural resources, in accordance with the integral development policies" of the Cuban government, the law did not set forth any concrete steps towards achieving its goals.⁴⁵ Law 33 provided only general statements of policy with no implementation directions.⁴⁶ The law's substantive provisions were also so vague that they did not establish a useful framework from which enforcement actions could be taken.⁴⁷

For example, Article 29 of Law 33 used terms such as "residual substances," "industrial wastes," "agricultural wastes," and "household wastes."⁴⁸ These terms, however, were not defined in the law. Law 33 also failed to provide any contamination limits, and the fines for violations of the law were left undefined.⁴⁹ The failure of Law 33 to provide definitions, environmental contamination standards, or means of enforcement made implementation of the statute nearly impossible.⁵⁰ In addition, environmental regulations issued by government agencies a decade after the law's

on the competent state organs, and on each citizen, to see to it that the waters and the air remain clean, and that the soil, flora and fauna be protected." *Id.*

⁴³ Ley 33 [Law 33] De Protección Del Medio Ambiente Y Del Uso Racional De Los Recursos Naturales, in GACETA OFICIAL, 12 de febrero de 1981.

⁴⁴ See B. Ralph Barba & Amparo E. Avella, *Cuba's Environmental Law*, in CUBA IN TRANSITION: PAPERS AND PROCEEDINGS OF THE FIFTH ANNUAL MEETING OF THE ASSOCIATION FOR THE STUDY OF THE CUBAN ECONOMY 276 (1995).

⁴⁵ *Id.*

⁴⁶ See *id.* at 278.

⁴⁷ See *id.* at 279.

⁴⁸ *Id.*

⁴⁹ See *id.*

⁵⁰ See *id.*

enactment were too general and unenforceable.⁵¹ These shortcomings rendered Law 33 ineffectual.

3.2.2. *Constitution of 1992*

In 1992, Cuba's current Constitution was enacted.⁵² Article 27 of the new Constitution states:

The State protects the environment and the natural resources of the country. It recognizes their close connection with sustainable social and economic development, so as to make human life more rational and ensure the survival, well being and safety of the current and future generations. It is the responsibility of the cognizant State organs to apply this policy.

It is the duty of all citizens to contribute to the protection of the waters and the air, and to preserve the soil, the flora, the fauna, and all of nature's rich potential.⁵³

The change in language in Article 27 in the new Constitution has been interpreted as an effort to bring it in line with the conclusions of the 1992 Rio Summit Declaration, and expressly link environmental protection with sustainable development.⁵⁴ Whatever the rationale of the Cuban Government in implementing the change, it evidences an intent to link potential environmental initiatives to the country's developmental needs, and vice versa.

3.2.3. *Law 81 of 1997*

In 1997, the National Assembly sought to rectify the shortcomings of Law 33 by repealing it and enacting a new, comprehensive and detailed environmental law, known as the "Law of

⁵¹ See Fredric Evenson, Comment, *A Deeper Shade of Green: The Evolution of Cuban Environmental Law and Policy*, 28 *GOLDEN GATE U. L. REV.* 489, 507 (1998).

⁵² CONSTITUCIÓN DE LA REPUBLICA DE CUBA (1992), in *GACETA OFICIAL*, 1 de agosto de 1992.

⁵³ *Id.* art. 27.

⁵⁴ See *LEGACY*, *supra* note 1, at 3:4; Evenson, *supra* note 51, at 500.

the Environment.”⁵⁵ Although this new law is more comprehensive and seeks to address some of the problems of its predecessor, it still contains many of the defects found in Law 33.

Law 81’s express intent is to create a legal framework through which socioeconomic activities are developed in a manner that is environmentally compatible⁵⁶ based on the principles of sustainable development.⁵⁷ To this end, the law designates CITMA as the primary administrative organ in charge of advancing environmental policy and directing its enforcement.⁵⁸

Law 81 establishes a three-tier system of environmental legal standards.⁵⁹ The first tier is Law 81 itself; the second tier is sector-specific laws and decrees to be issued by the National Assembly or the Council of Ministers; and the third tier is detailed regulations and standards to be issued by CITMA.⁶⁰

3.2.3.1. *Establishment of CITMA as Central Environmental Agency*

Law 81 constitutes an improvement over Law 33 in several significant respects. First, it establishes CITMA as the central, ostensibly independent, agency for environmental protection, with power and authority to resolve environmental issues—a situation that did not exist under the previous law.⁶¹ Under Law 81, CITMA has eleven broad areas of responsibility:

⁵⁵ Ley 81 [Law 81] Del Medio Ambiente, in GACETA OFICIAL, 11 de julio de 1997.

⁵⁶ See *id.* art. 9(a).

⁵⁷ See *id.* art. 1. See generally Nicholas A. Robinson, *Comparative Environmental Law Perspectives on Legal Regimes for Sustainable Development*, 3 WIDENER L. SYMP. J. 247 (1998) (discussing the interrelationship between environmental law and sustainable economic development).

⁵⁸ Ley 81 Del Medio Ambiente, art. 11.

⁵⁹ See Evenson, *supra* note 51, at 504-09.

⁶⁰ See *id.* at 504. The Council of Ministers is supposed to issue within three years of enactment of Law 81 such additional legislation as is necessary to fully implement the law. See Ley 81 Del Medio Ambiente, Primera Disposición Final [First Final Provision].

⁶¹ The main environmental agency established by Law 33, COMARNA, was only a coordinating agency comprised of representatives from 21 state agencies, the Presidents of 14 provincial environmental commissions, and representatives of mass organizations. COMARNA had no power to resolve inter-agency disputes, nor did it have authority to enforce environmental law and regulations, which were implemented by other state agencies with a greater interest in development than in protecting the environment. See COLLIS, *supra*

1. To develop a proposed National Environmental Strategy and other nationwide programs and strategies;
2. To manage the development of strategies for the protection of specific national resources;
3. To coordinate the actions of other State agencies in environmental protection matters;
4. To develop or approve, and implement, environmental protection regulations;
5. To propose economic regulations intended to promote the rational use of natural resources;
6. To mediate disputes between government entities on environmental issues, and to propose to the government solutions to environmental disputes if these cannot be resolved by conciliation;
7. To direct and oversee the environmental monitoring programs;
8. To implement environmental policy on issues of biological and nuclear safety;
9. To develop and manage special programs for the protection of specific resources, as needed;
10. To oversee and control activities in protected areas;
11. To administer the provisions of Law 81 and ensure its general application.⁶²

Law 81, however, does not expressly repeal the system of interagency responsibilities set in Law 33 and its implementing regulation, Decree-Law No. 118 of 1990.⁶³ Instead, Law 81 establishes that "regulations issued to complement Law No. 33 of January 10, 1981 remain in effect as long as they do not contradict this Law. Within two years of promulgation of this Law, the

note 11, at 1-2; *Environment and Transition*, *supra* note 2, at 492; Espino, *supra* note 1, at 339; Evenson, *supra* note 51, at 512.

⁶² Ley 81 del Medio Ambiente.

⁶³ Decreto-Ley 118 Estructura, Organización y Funcionamiento del Sistema Nacional de Protección del Medio Ambiente y del Uso Racional de los Recursos Naturales y su Organismo Rector [On the Structure, Organization and Operation of the National System for the Protection of the Environment and the Rational Use of Natural Resources] in GACETA OFICIAL, 18 de enero de 1990. Law 81, however, expressly repeals Law 33 and Decree-Law No. 118, while allowing some regulations to remain in effect. See Ley 81 Del Medio Ambiente, 1997 Segunda Disposición Final [Second Final Provision].

competent agencies, in coordination with CITMA, will present to the Council of Ministers proposals for the modification of those regulations, when required.”⁶⁴ This provision is interpreted as leaving with the other agencies (such as the Ministry of Tourism, the Ministry of Fishing Industries, etc.) the environmental responsibilities they previously had, but now subject to CITMA’s leadership.⁶⁵

CITMA is under the authority of the Council of Ministers with regard to the approval of the National Environmental Strategy and the National Program of Environment and Development, the resolution of disputes between state agencies, the designation of environmentally protected areas and buffer zones, and the taking of measures with respect to specific areas, ecosystems, or resources, as warranted.⁶⁶ Thus, in reality, the Council of Ministers has the final say on environmental issues and CITMA is not truly an “independent agency” as the term is applied in other countries.

3.2.3.2. *Requirement for Environmental Evaluation of New Projects*

Another way in which Law 81 differs from its predecessor is that it provides mechanisms for incorporating environmental considerations into development projects. Law 81 includes provisions requiring the issuance of permits or licenses in order to engage in activities that may affect the environment.⁶⁷ Article 24, for example, requires anyone participating in an activity that may significantly affect the environment to secure an environmental license through CITMA.⁶⁸ In addition, an environmental impact assessment (“EIA”) must be submitted to CITMA to determine whether a particular activity requires a license.⁶⁹ The law defines a long list of construction projects and activities that require an EIA.⁷⁰ Among these are construction of tourism installations, in-

⁶⁴ Ley 81 Del Medio Ambiente, Primera Disposición Transitoria [First Transitory Provision].

⁶⁵ See Evenson, *supra* note 51, at 511 n.175.

⁶⁶ See Ley 81 Del Medio Ambiente, art. 17.

⁶⁷ See *id.* art. 24.

⁶⁸ See *id.*

⁶⁹ See *id.* art. 27.

⁷⁰ See *id.* art. 28.

dustrial parks, airports, petrochemical and chemical facilities, hospitals, roads, and mining operations.⁷¹

In addition, Law 81 requires CITMA to set up an environmental inspection system intended to prevent environmentally destructive activities.⁷² The inspectors have the power to define corrective measures, establish deadlines for achieving compliance, and seek fines and other sanctions against violators.⁷³

It should be noted that before Law 81 was enacted, Cuba had instituted measures to require the performance of EIAs in connection with joint ventures involving foreign investors.⁷⁴ Nonetheless, Law 81 makes the performance of EIAs and the securing of environmental licenses explicit legal requirements affecting any activity that "may have significant impacts on the environment,"⁷⁵ including, but not limited, to the types of projects identified in the law.⁷⁶ By doing so, the law seeks to ensure that environmental impacts be considered in essentially all development projects.⁷⁷

The merits of the EIAs and other environmental reviews now being conducted have been brought into question by some ana-

⁷¹ *See id.*

⁷² *See id.* arts. 39-45.

⁷³ *See id.* arts. 42-43.

⁷⁴ Article 55 of the Foreign Investment Act states:

The Ministry of Foreign Investment and Economic cooperation will in appropriate cases submit the investment proposals it receives to the consideration of the Ministry of Science, Technology and the Environment so that the latter may evaluate the investment's suitability from the environmental point of view and determine whether an environmental impact evaluation is required as well as the suitability of granting pertinent environmental licenses and establishing a control and inspection program in accordance with the legislation then in effect.

Ley 77 de la Inversión Extranjera [Law 77 of the Foreign Investment Act], art. 55, in GACETA OFICIAL 6 de septiembre de 1995.

Shortly after the release of Law 77, regulations were issued for the performance and approval of environmental impact assessments and the granting of environmental licenses. Ministerio de Ciencia, Tecnología y Medio Ambiente Resolución Número 168/95, Reglamento para la Realización y Aprobación de las Evaluaciones de Impacto Ambiental y el Otorgamiento de las Licencias Ambientales, in GACETA OFICIAL, 9 de octubre de 1995.

⁷⁵ Ley 81 Del Medio Ambiente, art. 24, in GACETA OFICIAL, 11 de julio de 1997.

⁷⁶ *See id.* art. 28.

⁷⁷ *See* Evenson, *supra* note 51, at 505.

lysts, both as to the adequacy of the personnel, the resources available to conduct the assessments, and the consideration given to the results by the decision-makers.⁷⁸ The EIAs can only be performed by state-authorized institutes; the most important of which is a joint venture between the Cuban Government and a Spanish corporation.⁷⁹ This setup creates the risk that EIAs will only be pro-forma documents used to justify already-made investment decisions by the State, and to extract funds from the foreign investors, who pay the costs of the environmental evaluations and of any identified remedial measures.⁸⁰ Nevertheless, the requirement in Law 81 that environmental licenses be secured for new development projects is an important step forward, even if it is imperfectly implemented at the present time.

3.2.3.3. *Specific Laws and Regulations*

As noted earlier, Law 81 acknowledges that there is much in the way of legislation that needs to be written for specific aspects of environmental protection,⁸¹ and that new or amended regulations need to be issued to provide implementation details.⁸²

For the time being, the collection of laws, decrees and regulations that has developed since the enactment of Law 33 remains in place.⁸³ Unfortunately, however, many of these regulations are too general to be enforceable.⁸⁴

3.2.3.4. *Enforcement Provisions*

Chapters XI through XIII of Law 81 institute a system of administrative, civil and criminal sanctions against those who violate environmental laws and regulations.⁸⁵ Only the skeleton of such a system is provided in the law, with the details to be left to subsequent legislation. Thus, for example, Chapter XI ordains that sanctions be levied against those who do not comply with

⁷⁸ See LEGACY, *supra* note 1, at 3:35-36.

⁷⁹ See Evenson, *supra* note 51, at 519.

⁸⁰ See Ley 81 Del Medio Ambiente, art. 30.

⁸¹ See Ley 81 Del Medio Ambiente, Primera Disposición Final [First Final Provision].

⁸² See *id.*, Primera Disposición Transitoria [First Transitory Provision].

⁸³ See Evenson, *supra* note 51, at 507.

⁸⁴ See *id.*

⁸⁵ Ley 81 Del Medio Ambiente, arts. 67-75.

the law and its related regulations.⁸⁶ Article 67 states that every individual and entity is subject to administrative sanctions for violating Law 81, with the sanctions to be defined in complementing legislation. Article 68 states that administrative sanctions shall be made by using fines, and that every individual violation is punishable by a separate fine. No schedule of fines is provided, however. Article 69 directs anyone who knows of any breach of the environmental laws and regulations to notify the competent authorities.

Therefore, Chapter XI does not provide a basis for the imposition of fines, does not define the administrative procedures to be followed to levy fines, and is silent on the amount of the fines and on what avenues are available to enforce or contest a proposed fine.

Similar flaws are found in the other chapters. Thus, for example, Article 71(c) gives a right of action for damages to anyone who is adversely affected by an action or omission that impacts the environment, but there is no definition of the mechanisms for exercising this right.⁸⁷

3.2.3.5. *Environmental Education*

A critical problem with environmental protection in Cuba has been the lack of public awareness of environmental issues.⁸⁸ Law 33 sought to increase environmental awareness by including topics relating to the protection of the environment and the rational use of natural resources in school curricula.⁸⁹ Ultimately, responsibility for the implementation of public education programs was vested in CITMA.⁹⁰ Law 81 formally assigns to CITMA, in coordination with the Ministries of Education and

⁸⁶ Conversely, Law 81 includes provisions to grant "environmentally-friendly" companies financial support from the government in the form of tariff reductions, allowance of accelerated capital depreciation, or direct government funding. *Id.* art. 63.

⁸⁷ There are no norms to govern individual suits under Law 81, and it is even unclear who has standing to bring any such suits. See Evenson, *supra* note 51, at 523-24.

⁸⁸ See Barba & Avella, *supra* note 44, at 279.

⁸⁹ See Ley 33 De Protección Del Medio Ambiente Y Del Uso Racional De Los Recursos Naturales, art. 14, in GACETA OFICIAL, 12 de febrero de 1981. The law also provided for the systematic dissemination through the media of materials on the protection of the environment. See *id.* art. 13.

⁹⁰ See Ramlogan, *supra* note 17, at 71-72.

Secondary Education, the duty of developing and implementing Cuba's environmental education strategies and programs.⁹¹ Environmental information is also to be imparted upon workers through their training programs, and conveyed to the general population via the mass media.⁹²

3.2.3.6. *Assessment*

While Law 81 strives to better address environmental concerns, it contains flaws that, along with the island's governmental structure, make positive environmental action difficult. Law 81 has serious omissions. For example, the law does not address the critical issue of cleaning up past environmental damage. CITMA's independence is not guaranteed by the law and is essentially negated by Cuba's political structure, which restricts the agency's power to promulgate and enforce regulations. The law's enforcement provisions are weak and ill defined, and much of the specific legislation needed to implement the law still remains to be written.

3.3. *Regulatory Agencies and Regulations*

3.3.1. *COMARNA*

In 1977, COMARNA was created to develop national environmental policies, perform studies to support long and medium-term plans to protect the environment and utilize natural resources rationally, and analyze specific environmental problems including those associated with water pollution, sand erosion, and agriculture.⁹³ At the time of its creation, COMARNA had no legislative mandate and therefore no authority, and did not contribute much to the resolution of environmental problems.⁹⁴ Upon enactment of Law 33, COMARNA was given the role of coordinating the work of a National System for the Protection of the Environment and the Rational Use of Natural Resources, comprised of ministries, regional and local governments, and mass

⁹¹ See Ley 81 Del Medio Ambiente, art. 46, in GACETA OFICIAL, 11 de julio de 1997.

⁹² See *id.* arts. 47-56; Evenson, *supra* note 51, at 503.

⁹³ See LEGACY, *supra* note 1, at 3:28.

⁹⁴ See Ramlogan, *supra* note 17, at 48.

organizations.⁹⁵ Under this organizational setup, COMARNA had no real authority and had no power to impose its views on environmental issues over those of pro-development ministries and government agencies.⁹⁶

COMARNA's weakness as a regulatory agency was exacerbated by the lack of autonomy and power environmental agencies have in Cuba.⁹⁷ Jurisdictional and enforcement lines among agencies were unclear, which led to conflict as each agency sought to assert its presumed authority.⁹⁸ In addition, COMARNA was understaffed and lacked the resources needed to effectively monitor compliance with regulations.⁹⁹ As a result, environmental laws were often administered by various ministries, which in general were better funded.¹⁰⁰ This created a clear conflict of interest because environmental regulations were being enforced by agencies responsible for meeting production goals that would be adversely impacted by enforcement of the regulations.¹⁰¹

3.3.2. CITMA

In 1994, the Cuban government sought to remedy the problems of unenforceable laws and inter-agency conflict by reorganizing its bureaucratic framework and creating a single agency, CITMA, in which the environmental functions of the various bureaucracies would be consolidated.¹⁰² CITMA has two main divisions: the Board of Environmental Policy that develops policy; and the Environmental Agency that implements that policy and performs public information, educational, and other support functions.¹⁰³ CITMA also serves as an advisor to the Council of Ministers on environmental matters and helps to organize the environmental programs of other state agencies.¹⁰⁴

⁹⁵ See Ley 33 De Protección Del Medio Ambiente Y Del Uso Racional De Los Recursos Naturales, art. 117 in GACETA OFICIAL, 12 de febrero de 1981.

⁹⁶ See COLLIS, *supra* note 11, at 1-2.

⁹⁷ See *Environment and Transition*, *supra* note 2, at 492.

⁹⁸ See *id.*

⁹⁹ See COLLIS, *supra* note 11, at 2.

¹⁰⁰ See *id.*

¹⁰¹ See *id.*; Evenson, *supra* note 51, at 512.

¹⁰² See Evenson, *supra* note 51, at 512.

¹⁰³ See *id.* at 512-13.

¹⁰⁴ See *id.* at 512.

The Environmental Agency performs its duties through various institutes and centers; each assigned to a particular environmental protection area and given a range of tasks.¹⁰⁵ For example, the Center for Environmental Management and Inspection grants environmental licenses and conducts environmental inspections, while the Center for Environmental Information, Dissemination and Education is responsible for educating the public on environmental matters and providing information about the environment.¹⁰⁶

Despite the improvements that the new regulatory framework provides, it appears that the factors that made previous regulations unenforceable remain in place, particularly the lack of autonomy or enforcement capacity.¹⁰⁷ As Cuba's environmental policies must still be approved by the Council of Ministers, CITMA has no authority to independently advance its policies.¹⁰⁸ Although Article 12(f) of Law 81 grants CITMA authority on paper to mediate inter-agency conflicts in matters relating to the environment, it fails to give the agency real power to prevail in case of inter-agency conflicts that pit environmental against economic issues.

3.4. *Treaties*

Since 1959, Cuba has adhered to over two dozen conventions, treaties, protocols and other international agreements on matters relating to the environment.¹⁰⁹ While those agreements are legally binding on Cuba and constitute expansions of Cuba's environmental commitments, there is little evidence that they have had any measurable influence on Cuba's domestic environmental policies.¹¹⁰

¹⁰⁵ See *id.* at 512-13.

¹⁰⁶ See *id.* at 513.

¹⁰⁷ See *Environment and Transition*, *supra* note 2, at 492.

¹⁰⁸ See Evenson, *supra* note 51, at 511.

¹⁰⁹ For a listing of the environmental agreements to which Cuba is a party, see Center for International Earth Science Information Network, et al. *Which Treaties Are in Force for a Given State?* (visited Apr. 10, 2000) <<http://sedac.ciesin.org/pidb/pidb-home.html>>. See LEGACY, *supra* note 1, at 3:19-22 for a summary discussion of those agreements.

¹¹⁰ For example, Cuba, along with the United States, France, the United Kingdom, and 14 Caribbean nations, is a party to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region ("Cartagena Convention") which requires parties, *inter alia*, to:

3.5. *Policy Issues Arising under Cuba's Current Environmental Regime*

3.5.1. *Government as Regulator and Major Polluter*

As the owner of the means of production on the island, and as the institution primarily responsible for the environmental problems in Cuba, the Cuban government faces an obvious conflict of interests in the implementation of an effective environmental regime. This conflict of interests has resulted in an environmental regime that: (1) is based on ambiguous legislation; (2) has not yet established an independent and empowered regulatory authority; (3) lacks public participation in the environmental decision-making process and in the enforcement of environmental laws; (4) lacks environmental planning; and (5) disregards the need to correct the severe environmental damage caused by its policies to date. Each of these deficiencies helps make environmental protection in Cuba a process that achieves only marginal results.

3.5.2. *Ambiguous Legislation*

The broad and vague language that permeates Law 81 makes many of its provisions unenforceable.¹¹¹ Cuba's legal environ-

take all appropriate measures in conformity with international law and in accordance with this Convention and those of its protocols in force to which they are parties to prevent, reduce and control pollution of the Convention area and to ensure sound environmental management, using for this purpose the best practicable means at their disposal and in accordance with their capabilities among other obligations.

Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region, Mar. 24, 1983, art. 4.1 (visited Apr. 10, 2000) <<http://sedac.ciesin.org/pidb/texts/marine.caribbean.1983.html>>.

The Cartagena Convention also requires parties to "take all appropriate measures to prevent, reduce and control pollution of the Convention area caused by coastal disposal or by discharges emanating from rivers, estuaries, coastal establishments, outfall structures, or any other sources on their territories." *Id.* art. 7. Despite these commitments, Cuba has engaged in the widespread and indiscriminate dumping of pollutants into the seas surrounding the island, undeterred by the prohibitions in the Cartagena Convention. See LEGACY, *supra* note 1, at 5:35-38; Carolina Hospital, *Cuba's Contamination Threatens Caribbean Basin*, GABLES PAPER, Nov. 4, 1992, at 6.

¹¹¹ For example, Article 70 of Law 81 reads: "Every natural or juridical person who, through his actions or omissions harms the environment is under the obligation to stop its conduct and remedy the damages it causes." Ley 81

mental framework also fails to provide many necessary definitions or standards. For example, Chapter IV of Law 81 contains provisions on the handling of hazardous and radioactive waste, but nowhere in Law 81 are these terms precisely defined. Article 155 states that the authorized agencies shall establish the norms and standards for classifying, transporting, and exporting hazardous waste, but the current regulations on hazardous waste contain no such provisions.¹¹² Chapter V of Law 81, which discusses toxic chemicals, fails to provide definitions for identifying toxic chemicals, and delegates the authority to establish norms and standards to the relevant agencies. The relevant agencies, however, have not promulgated any such regulations.¹¹³ Even where attempts have been made to classify and define pollutants, the failure to establish limits on their emissions makes the standards unenforceable.¹¹⁴ Indeed, interviews with individuals in several Cuban environmental administrative agencies have yielded virtually no examples of legal actions taken to enforce the environmental laws against violators.¹¹⁵

3.5.3. *Absence of Independent and Empowered Regulatory Authority*

The absence of environmental enforcement becomes easy to understand when one considers the limited independence and authority granted to the environmental regulatory authority, CITMA. The limitations of CITMA are even more pronounced in practice because, under the centralized decision-making structure that exists in Cuba, any action by CITMA would risk being overturned if the Communist Party felt that compliance would undermine an important economic objective. The practical consequences of the Cuban political system and the structural limita-

Del Medio Ambiente, art. 70, in GACETA OFICIAL, 11 de julio de 1997. There is, however, no other mention in the law as to how the remediation of environmental damages is to take place, particularly if the damage has been inflicted by the State or one of its agencies.

¹¹² See Ramlogan, *supra* note 17, at 113-15.

¹¹³ See *id.* at 104-06.

¹¹⁴ For example, in an effort to curb air pollution, specific gases and substances were identified as environmentally harmful, but no limits were placed on the emissions amounts of such pollutants. See *id.* at 65.

¹¹⁵ See, e.g., COLLIS, *supra* note 11, at 2; LEGACY, *supra* note 1, at 3:30-32; Ramlogan, *supra* note 17, at 88-89.

tions of the Cuban bureaucracy combine to make CITMA and its supporting environmental regulatory agencies ineffective.

3.5.4. *Decision-Making Process*

For over forty years, the Castro regime has successfully managed to prevent any form of public participation in environmental decision-making.¹¹⁶ The operation of environmental groups is tightly controlled by the central government, as is the dissemination of information on environmental issues.¹¹⁷ To date, no independent organization has played a significant part in actual environmental decisions.¹¹⁸ Groups that protest against decisions that may have a negative impact on the environment are often branded dissidents for opposing official policy. Thus, in 1988, the Cuban government abolished the Asociación Naturista Vida (Life Naturalist Association), an organization that discussed environmental matters.¹¹⁹ The leaders of the Movimiento Ecopacifista Sendero Verde (Green Path Ecopacifist Movement), a group that favored solar rather than nuclear energy for electricity generation, advocated the restructuring of the Cuban political system to promote ecological principles, and sought the return of land to farmers, were also arrested by the Cuban government.¹²⁰

Various so-called environmental nongovernmental organizations ("NGOs") operate in Cuba ostensibly independent of government influence. The most important of these organizations is Pro-Naturaleza, which in reality operates under the tight scrutiny of CITMA, since it is sponsored by CITMA, and headquartered within the Ministry.¹²¹ In addition, most of its leadership is employed at CITMA, and, although the organization does not receive state funds, it receives money from CITMA to pay for its office needs.¹²²

¹¹⁶ See, e.g., *Environment and Transition*, *supra* note 2, at 493-94; Sergio Díaz-Briquets & Jorge Pérez-López, *Socialism and Environmental Disruption: Implications for Cuba*, in CUBA IN TRANSITION: PAPERS AND PROCEEDINGS OF THE EIGHTH ANNUAL MEETING OF THE ASSOCIATION FOR THE STUDY OF THE CUBAN ECONOMY 154, 168 [hereinafter *Environmental Disruption*].

¹¹⁷ See *Environment and Transition*, *supra* note 2, at 494.

¹¹⁸ See *Environmental Disruption*, *supra* note 116, at 168.

¹¹⁹ See *id.*

¹²⁰ See *id.* at 168-69.

¹²¹ See *Environment and Transition*, *supra* note 2, at 494.

¹²² See *id.*

3.5.5. *Lack of Environmental Planning*

The National Program on the Environment and Development outlines Cuba's national environmental policy.¹²³ This document provides the general objectives from which various government agencies were to draft comprehensive strategies to implement the goals described in the policy document.¹²⁴ Unfortunately, the environmental strategies that have been developed by the relevant agencies are incomplete and ineffective.¹²⁵ For example, to date no strategy or plan exists to protect or promote bio-diversity.¹²⁶

3.5.6. *Lack of Remediation Policies*

As previously noted, Law 81 is silent on any efforts to remedy the environmental damage that has been inflicted by the State over the last forty years. In the absence of such a plan, and given the current environmental situation in Cuba, all the legislation that Cuba has enacted or may in the future enact will not serve to restore the environment to an acceptable condition.

4. ENVIRONMENTAL POLICY OBJECTIVES FOR CUBA DURING ITS TRANSITION

4.1. *Introduction*

Lessons learned from environmental initiatives in Latin America and Eastern Europe, as well as Cuba's current environmental situation, suggest that Cuba should set three major objectives for its environmental program during the transition years. First, Cuba should implement measures that further, as much as possible, remediate environmental disasters inherited from the socialist regime.¹²⁷ Second, Cuba must define and implement realistic goals to promote future conservation and environmental protection. Third, Cuba needs to harmonize its remediation, conservation, and environmental protection policies with those guiding the country's economic recovery.

¹²³ See Ramlogan, *supra* note 17, at 66.

¹²⁴ See *id.* at 68.

¹²⁵ See *id.*

¹²⁶ See *id.* at 68-69.

¹²⁷ See LEGACY, *supra* note 1, at 11:22.

The rest of this section describes these policy objectives in detail. Section 5 provides recommendations on legislation to help accomplish these objectives.

4.2. Remediation

During its transition to a free-market economy, Cuba should seek to remedy the most critical environmental problems. For example, the pressing need for clean water in Cuba must be addressed with policies that promote the clean-up of the most polluted sources of coastal, inland, ground, and drinking water.

It is important that the remediation plan state its goals in a measurable and manageable fashion. An effective plan should consist of specific goals, timetables for achieving them, milestones, and indicators of progress. The Polish National Environmental Policy of 1991 provides a good example of how a country in transition may develop a workable remediation plan.¹²⁸ Poland set short-, medium-, and long-term remediation priorities, each with its own completion dates.¹²⁹ The short-term priorities addressed immediate dangers to human health, which were to be mitigated by 1994-1995.¹³⁰ The medium-term priorities, scheduled to be completed by the year 2000, would help bring Poland in line with the environmental standards of the European Union.¹³¹ Examples of these priorities include the goal of a fifty-percent reduction in discharges of untreated sewage and a significant improvement in rural drinking water quality.¹³² A long-term priority is to integrate the concept of sustainable development into the entire Polish economy, and incorporate environmentally sound techniques into all aspects of the production process.¹³³

By 1996, the areas of excessive river pollution in Poland decreased by about fifty percent and contaminating discharges to

¹²⁸ See *Poland: Guiding Principals* (visited Apr. 1, 2000) <<http://www.rii.org/envatlas/europe/poland/pl-prin.html>>; Resource Renewal Institute, *Environmental Atlas: Poland*, (visited Apr. 1, 2000) <<http://www.rii.org/envatlas/europe/poland/pl-index.html>>.

¹²⁹ See *Poland: Guiding Principals*, *supra* note 128.

¹³⁰ See *id.*

¹³¹ See *id.*

¹³² See *id.*

¹³³ See *id.*

rivers significantly dropped.¹³⁴ Although Poland continues to struggle with its environmental problems, significant progress has been made.¹³⁵ Thus, by establishing clear and reasonable objectives, Poland was able to demonstrate progress in its environmental remediation program, rather than having to explain the failure to meet unachievable goals.

During its transition to a free-market economy, Cuba should establish a remediation policy that is realistic and has clearly defined, achievable goals. Initially, Cuba's government should target conditions that present dangers to human health and safety. Cuba should achieve measurable improvements in these areas before attempting other projects since there will probably be limited resources available for remediation, and these resources will require careful management.¹³⁶ In addition, the success of the initial projects will establish a track record that may attract additional resources to support remediation efforts; thus it is essential that the initial goals be achievable and actually met.

4.3. *Goals to Promote Conservation and Environmental Protection*

4.3.1. *Long-Term Goals*

As it undergoes its economic transition, Cuba will need to develop an environmental protection strategy for both the long term and the immediate future.¹³⁷ Such a strategy should be directed towards promoting conservation and environmental protection based on defined environmental objectives for the country.¹³⁸

¹³⁴ See State Inspectorate for Environmental Protection, *The State of the Environment in Poland Report (1997)* (visited Mar. 28, 2000) <<http://nfp-pl.eionet.eu.int/SoE/wwwang/jed.htm>>.

¹³⁵ See Resource Renewal Institute, *Poland: Development of Environmental Policy* (visited Apr. 16, 2000) <<http://www.rri.org/envatlas/europe/poland/pl-policy.html>> [hereinafter *Poland: Development of Policy*].

¹³⁶ See Leiva, *supra* note 2, for a discussion of strategies that could be used to maximize the funds available for environmental remediation activities.

¹³⁷ See LEGACY, *supra* note 1, at 11:1.

¹³⁸ For a description of the environmental policy experiences of other transition countries, see Shelley Bookspan, *From the Environment: When the Smoke Clears: Environmental Restoration in Central and Eastern Europe*, 21 REAL EST. L.J. 407 (1993). For a discussion of the Latin American environ-

Cuba will therefore need to start by setting long term goals (i.e., those to be achieved ten or more years into the future) for its environmental program. These goals should be fairly broad and include items such as: (1) achieving the rational use of natural resources leading to sustainable development; (2) reaching an agreement between central, provincial and municipal governments on the subject of the environment; (3) preventing further significant air, water, and soil pollution; (4) establishing a strong and effective national environmental agency; and (5) preserving resources so as to maintain ecological equilibrium.¹³⁹ These broad objectives should be supplemented by more specific medium and short-term goals, and reflected in appropriate legislation.

The goal of achieving the rational use of natural elements to promote sustainable development is a fundamental one, for in so doing, Cuba will be committing itself to balancing environmental needs with economic development. Likewise, it is essential that the environmental framework that is adopted enjoy the cooperation of all levels of government. In order to achieve such cooperation, Cuba's environmental goals must be such that they can be embraced and supported at the provincial and municipal levels. In addition, each level of government will have to be assigned tasks that it can effectively perform.

Cuba will have to commit to the long-range reduction of air, water, and soil pollution to harmless levels. This will involve the setting of emissions standards, as Poland has done, designed to gradually reduce toxic emissions over time, coupled with a suitable remediation program.¹⁴⁰

For the reasons discussed in Section 3.3, in connection with the weaknesses of CITMA and COMARNA, Cuba will have to establish a strong central agency with the authority to implement environmental regulations without interference. The administrative setting for this agency will have to be designed to avoid the problem that currently exists as a result of allowing other government agencies to self-regulate on environmental matters.

Finally, Cuba should strive to achieve an ecological equilibrium that will allow the continued growth of industries dependent on the environment, such as agriculture and tourism. Indeed,

mental experience, see Felipe Páez, *Environmental Framework Laws in Latin America*, 13 PACE ENVTL. L. REV. 625, 642 (1996).

¹³⁹ See Páez, *supra* note 138, at 626 (Brazil), 646-47 (Mexico).

¹⁴⁰ See Poland: *Development of Policy*, *supra* note 135.

achieving an ecological equilibrium not only makes sense from an environmental perspective, but from an economic one as well.

4.3.2. *Medium-Term Objectives*

Once Cuba has established its general long-term goals, it must then turn to defining more specific short (zero to five years) and medium (five to ten years) term environmental objectives. Cuba should set as medium-term objectives those that will take several years of effort to accomplish, and those that can be accomplished in a relatively short time but do not necessarily yield an immediate positive impact on the environment.

Medium-term objectives could be items such as: (1) developing a re-defined system of protected natural areas; (2) establishing an environmental technical registry; (3) implementing a system of incentives to engage in environmental research and development; and (4) establishing programs to support environmental education. Establishing a system of protected natural areas is self-explanatory; however, some of the other medium-term goals require more elaboration.

Some countries, like Brazil, have adopted legislation that requires all persons with expertise in areas such as pollution control, and persons trading in equipment designed for pollution control, to register with a national environmental technical registry.¹⁴¹ This type of registry gives the government and the citizenry the means to learn how to obtain pollution control equipment and how to get it installed. The availability of this information may lead to the increased deployment of environmentally-friendly technology in industrial and other facilities.

Cuba should also institute incentive programs to encourage businesses to adopt environmentally-sound practices. Such incentives may include, for example, tax reductions or other incentives for businesses that install anti-pollution devices. Incentives can also be given to programs that result in ecological research and development or the installation of anti-pollution equipment in existing facilities.¹⁴²

Another medium-term goal could involve the development of a system to better inform the population about environmental protection issues. This could involve adopting legislation; similar

¹⁴¹ See Páez, *supra* note 138, at 629.

¹⁴² See *id.* at 629.

to that enacted in Mexico, Venezuela and Chile, ordering the publication in the official government newspaper or "gazette" information on proposed government actions with environmental implications and other environmental matters.¹⁴³

4.3.3. *Short-Term Objectives*

Establishment of specific short-term environmental goals and implementation deadlines will be a crucial element of Cuba's environmental strategy because at the start of the transition Cuba will be confronted with multiple environmental problems requiring resolution and very limited financial resources. In addition, setting goals and deadlines will serve to give direction both to government agencies and the private sector as to where the emphasis of the government efforts should be during the initial phases of the transition.¹⁴⁴

The following are, for example, half a dozen short-term goals and implementation deadlines that could be set with respect to alleviating the problem of pollution of the water bodies in the Greater Havana area:

- Reducing, within five years, the volume of inorganic and untreated organic waste released into Havana Harbor by fifty percent from the average level measured at the start of the period;
- Building and bringing into operation waste treatment facilities having sufficient capacity to achieve the previous goal;
- Performing, within five years, all needed repairs and upgrades to restore Havana's water and sanitary sewer system to its pre-1959 design capacity, and completing conceptual designs and preliminary plans for the development of a new, modern water system to be awarded on a concession basis to a private operator;
- Establishing, within five years, such additional landfills and other solid waste disposal facilities as are required to

¹⁴³ See *id.* at 639 (Chile), 668 (Venezuela). In Mexico, the law requires that the environmental protection agency publish an "environmental gazette" containing information on proposed projects, applicable standards and other relevant matters, in addition to the publication of environmental communications in the official government gazette. See *id.* at 655.

¹⁴⁴ See LEGACY, *supra* note 1, at 1:12.

provide for the adequate disposal of solid urban waste in the city of Havana and its environs;

- Establishing, within five years, an adequate network of environmental monitoring stations that can measure the levels of various contaminants released from specific sources; and
- Issuing, within five years, regulations establishing specific limits on the amounts of various named pollutants that can be discharged from industrial facilities, imposing fines and fine collection mechanisms, and establishing a system for issuing discharge permits and reporting standards.

As the above examples show, addressing any one of the serious environmental problems facing Cuba is a complex task that will require a multitude of efforts by various government bodies. For that reason, the list of short-term objectives needs to be kept short and focused on the most urgent problems.

4.4. *Minimization of Environmental Impacts on Cuba's Economy*

Cuba will undoubtedly face serious economic problems during its transition, as have many other countries in similar situations.¹⁴⁵ Some of these problems, such as rising unemployment and marginal or unprofitable state-owned enterprises, will tend to impose limitations on the environmental recovery initiatives that can be implemented.¹⁴⁶ Additionally, pressure to attract foreign investment may curtail the government's willingness to impose extensive environmental requirements.¹⁴⁷ Although there may be commitments by the government to harmonize environmental strategies and economic development policies, the question at the end of the day will be whether environmental initiatives will survive against pressing economic needs.¹⁴⁸

¹⁴⁵ See Ruth Greenspan Bell, *Environmental Law Drafting in Central and Eastern Europe*, ENVTL. L. REP., Sept. 1992, available in Westlaw, 22 Env'tl. L. Rep. 10597 at *2.

¹⁴⁶ See *id.* at *5.

¹⁴⁷ See Matias F. Travieso-Diaz & Steven R. Escobar, Comment, *Cuba's Transition to a Free-Market Democracy: A Survey of Required Changes to Laws and Legal Institutions*, 5 DUKE J. COMP. & INT'L L. 379, 421 (1995).

¹⁴⁸ See Barba & Avella, *supra* note 44, at 280.

The real issue for Cuba during its transition will, however, be whether the economic strains and political uncertainty of an unstable transition period will erode support for democracy itself.¹⁴⁹ The new government must achieve a degree of economic stability before it is able to deal fully with the environmental problems that the country faces.¹⁵⁰

This economic reality does not mean that the country must forego addressing environmental problems. Considering the importance that the tourism and agricultural sectors will have during Cuba's transition period and beyond, Cuba may not be able, as an economic issue, to ignore for long the environmental issues affecting those sectors. Efforts to remedy the most environmentally threatened areas should therefore receive priority. These efforts should at a minimum include arresting the increase in pollution of Cuba's inland and coastal waters and stopping further erosion and salinization of the arable land. For the tourism and agricultural sectors, these environmental protection measures represent an investment in the country's economy.

On the other hand, Cuba has to be careful not to impose excessive environmental requirements, especially in sectors (such as manufacturing) where foreign investment is likely to be an important factor.¹⁵¹ The new government may also need to limit the liability of investors for environmental damage created under the previous regime.¹⁵² More generally, environmental legislation affecting foreign investment needs to have realistic goals and defined implementation provisions.¹⁵³ These features will allow investors to factor environmental issues into their investment decisions.¹⁵⁴

¹⁴⁹ See Bell, *supra* note 145, at 5.

¹⁵⁰ See *id.*

¹⁵¹ See Matias F. Travieso-Diaz & Alejandro Ferrate, *Recommended Features of a Foreign Investment Code for Cuba's Free Market Transition*, 21 N.C. J. INT'L L. & COM. REG. 511, 558 (1996).

¹⁵² See *id.* at 559.

¹⁵³ See *id.*

¹⁵⁴ See *id.*

5. ENVIRONMENTAL LEGISLATION RECOMMENDATIONS FOR CUBA'S TRANSITION PERIOD

5.1. *Introduction*

It is probable that the environmental legislation enacted during Cuba's transition will have as its centerpiece a broad framework law supplemented by laws and regulations covering specific subjects. If enactment of a new framework law is not immediately feasible, it may be necessary to promulgate interim legislation that addresses the most urgent problems or fills the gaps in the legislation that is in place at the onset of the transition.¹⁵⁵

At the same time Cuba is developing its environmental legislation, it will also be seeking to attract foreign investment to assist with the country's economic reconstruction.¹⁵⁶ The environmental legislation that is enacted must ensure that foreign investment is an ally in improving the environment rather than a contributor to its further deterioration. Thus, for example, the environmental legislation applicable to foreign investment projects will need to include: (1) regulations concerning emissions of toxic substances; (2) incentives for the installation of technologies that minimize the releases of such substances; and (3) an enforcement system that imposes well-defined penalties for the release of toxic materials. The environmental laws may also need to establish distinctions between existing sources of pollution (i.e., already existing facilities) and newly established operations.

The remainder of this section provides recommendations for legislation that seeks to accomplish these objectives and those outlined in the preceding section.

5.2. *Constitution*

A new constitution will most likely be enacted at some point during Cuba's transition.¹⁵⁷ When this happens, an opportunity

¹⁵⁵ See Bell, *supra* note 145, at 14.

¹⁵⁶ See MATIAS F. TRAVIESO-DIAZ, *THE LAWS AND LEGAL SYSTEM OF A FREE-MARKET CUBA* 105 (1997) [hereinafter LAWS AND LEGAL SYSTEM].

¹⁵⁷ Some writers advocate a return to the Constitution of 1940 as a governing standard for Cuba's transition, while others express the view that the 1940 Constitution is now obsolete and a transition government will need to issue temporary constitutional "acts" that would be in place until a Constitutional Convention can be convened and a new constitution can be drafted and ratified by the people. See *id.* at 57, 63 n.10, 67 n.53. In any case, it is clear that a rela-

will present itself for laying down environmental goals and aspirations in the form of constitutional provisions.¹⁵⁸ Such provisions should be in the nature of general policies, such as placing environmental values on an equal footing with other important societal goals. The substantive elements of environmental protection would be contained in the framework environmental law and other lower-tier legislation.

5.3. *Framework Law*

5.3.1. *Introduction*

As discussed in previous sections, the framework environmental laws enacted by Cuba's current government—Laws 33 and 81—are broad in scope and, at the same time, lacking in implementation guidelines and priorities.¹⁵⁹ A framework environmental law for Cuba's transition period should, on the other hand, have five characteristics:

- It should prioritize the environmental protection and remediation efforts so that the most pressing problems are addressed first;
- It should set specific, attainable goals and realistic timetables for their accomplishment;
- It should set practicable enforcement mechanisms, assign enforcement responsibilities and authority to specific agencies, and grant rights of action to private citizens or non-government organizations;
- It should provide the means for public education on environmental issues and participation by the general public

tively short time after the start of the transition Cuba will find it necessary to adopt a new constitution tailored to the country's new circumstances.

¹⁵⁸ The 1940 Constitution was virtually silent on environmental issues, but the Constitutions of 1976 and 1992 provided declarations of principles indicating that the State shall protect the environment and that it is the duty of the citizens to contribute to such protection. See CONSTITUCIÓN DE LA REPUBLICA DE CUBA, art. 27 (1976); CONSTITUCIÓN DE LA REPÚBLICA DE CUBA art. 27 (1992).

¹⁵⁹ Cuba's framework laws are not unlike those enacted in the Eastern European countries starting in the 1970s. Those laws, in varying degrees of detail, set standards that could not be implemented and were regarded by many as mere window dressing. See Bell, *supra* note 145, at 7.

and interested parties in the development of implementing laws and regulations;

- It should provide for periodic re-examinations of the framework legislation to assess the continued validity and attainability of the goals and implementation schedules and address enforceability problems as they arise.

5.3.2. *Setting Priorities for Environmental Initiatives*

Each of the environmental problems that Cuba is experiencing is serious and merits attention. However, given the economic constraints within which the transition government will have to operate, it will be necessary to prioritize the environmental initiatives that are undertaken, particularly in the first few years of the transition.

Establishing priorities is relatively simple at the conceptual level, since the principal problems are well recognized. They are:

- Soil degradation,
- Worsening of sanitary and environmental conditions in human settlements,
- Water contamination,
- Deforestation, and
- Loss of biological diversity.¹⁶⁰

The framework law should declare these problems, or a subset of them, to be the prime areas of priority in Cuba's environmental program for the transition period. Such a declaration, however, would need to be accompanied by specific goals and deadlines for dealing with each priority area.

5.3.3. *Establishing Enforcement Mechanisms*

The framework law should establish the basic elements of a system for defining environmental duties and prohibitions and provide the bases for the implementation of the system. The law should, *inter alia*: (1) define which environmental protection activities are retained within the central government and which, if any, are delegated to other entities, such as provincial or municipal governments; (2) create an agency with the mandate of coordinating all environmental activities not delegated to organiza-

¹⁶⁰ See LEGACY, *supra* note 1, at 1:12; AAMEC, *supra* note 1.

tions outside the central government; (3) define the powers of the environmental agency and declare its independence from the executive and its supremacy over other agencies in matters within its jurisdiction; (4) establish mechanisms for the resolution of inter-agency environmental disputes; (5) empower the environmental agency to issue implementing regulations, establish pollutant discharge limits, perform audits and inspections of private and public facilities, and impose and collect fines from violators; (6) grant the environmental agency power to obtain injunctive and other judicial relief against parties that contravene the agency's regulations; (7) empower the agency to issue and administer permits for those activities that may result in the discharge of contaminants; (8) define sources of funding for the agency's discharge of its duties; and (9) grant private parties the right to seek judicial redress from adverse actions by the agency, and the limited right to bring judicial actions against the government or other private parties for failure to comply with the environmental laws.

5.3.4. *Re-examining Fundamental Laws and Policies*

The transition period in Cuba will likely be characterized by frequent and perhaps dramatic changes in economic and political conditions. These changes may, in turn, impact the pace of environmental recovery and may require refocusing—through acceleration, modification, slowdown, or shift in emphasis—of elements of the environmental framework. Accordingly, the fundamental law must be considered “work in progress” legislation, and may expressly provide that it is subject to periodic re-evaluation, at least during the first decade of the transition.

5.4. *Legislation Regulating New Activities*

Economic necessity may force a Cuban transition government to allow many of the existing sources of pollution to remain in operation with only partial reduction in their environmental impacts, while at the same time instituting stricter regulations for new economic activities undertaken on the island. Cuba currently has a number of aging industrial facilities for which it may not be feasible to retrofit the equipment needed to make them environmentally-friendly. This being the case, the most stringent environmental protection standards will have to be made applicable only to newly developed facilities.

Cuba should impose environmental standards on new installations that take into account the state of technology in environmental protection and reflect economic analyses, scientific studies, and the input of public and private organizations.¹⁶¹ One system of regulations that Cuba might want to apply to new operations is the one currently in use in Poland. The Polish system levies fees based on the volume of emissions of various pollutants. A set of fees applies to discharges within permitted limits, and a substantially higher set of fees is imposed for discharges above legal limits.¹⁶² This system creates a range of options for facility operators beyond simple compliance with emissions laws, and provides a method of financing other environmental projects within the nation.

Cuba could also establish incentives that encourage compliance with environmental standards and the adoption of environmentally friendly technologies. One example of such an incentive is found in Brazilian law, under which public agencies give funding priority to research and development programs on ecological issues.¹⁶³ This form of incentive could provide motivation for entities seeking to operate in Cuba to take an active role in developing new environmental technologies and bringing other forms of environmental development programs to Cuba.

Another type of incentive Cuba may wish to include in its environmental framework is a system of tax benefits, patterned after incentive programs adopted in Mexico and Brazil, for facilities that incorporate anti-pollution technologies.¹⁶⁴ These and other types of incentives may serve to bring the investors' environmental practices in line with the country's policies.

The Cuban environmental framework must also include an effective system for evaluating which new projects will be allowed to proceed, based on environmental impact assessments. Such environmental impact assessments will have to be prepared efficiently and evaluated quickly, so as not to impede project devel-

¹⁶¹ See Páez, *supra* note 138, at 640.

¹⁶² See Resource Renewal Institute, *Poland: Policy Instruments* (visited Mar. 4, 2000) <<http://www.rri.org/envatlas/europe/poland/pl-inst.html>> [hereinafter *Poland: Policy Instruments*].

¹⁶³ See Páez, *supra* note 138, at 629.

¹⁶⁴ See *id.* at 629, 652.

opment.¹⁶⁵ Cuba will also need to develop a comprehensive list of the types of projects that will have to submit to environmental assessments. Such a list may include, as does Chile's environmental law, projects that: (1) pose a risk to health; (2) pose a threat to renewable natural resources; (3) affect resettlement of communities; (4) are in proximity to towns, protected areas, or resources that may be affected; (5) significantly alter scenic or tourist areas; or (6) alter monuments.¹⁶⁶

5.5. *Legislation Regulating Existing Facilities*

Over the course of Cuba's socialist history, numerous industrial facilities have come to operate in ways that damage the environment. Sugar mills, cement plants, mines, steel mills, oil refineries and other industrial facilities have become major contributors to Cuba's current environmental problems.¹⁶⁷ Yet, no environmental framework that Cuba could adopt would be likely to succeed in eliminating pollution from these facilities, without also putting many of them out of business and aggravating the country's economic crisis.

Rather than attempting to comprehensively eliminate the polluting activities of industrial facilities currently in existence in Cuba, the Cuban government will need to institute legislation that allows facilities currently in existence to operate under less restrictive regulations than those imposed on new facilities. As time passes, requirements on the older facilities can be tightened until they are subject to the same standards as new ones or are decommissioned. Several countries, such as the Czech and Slovak Republics, Bulgaria, and Hungary have adopted variations of "phase-in" plans for environmental regulations that allow new facilities to come into operation subject to a full set of environ-

¹⁶⁵ In Chile and Venezuela, for example, if no decision on the approval of a project is rendered by the reviewing authorities within a specified period after the environmental assessment is completed, the project is deemed approved. See *id.* at 635-36 (Chile), 673 (Venezuela).

¹⁶⁶ See *id.* at 634. An example of over-inclusiveness in the types of projects requiring EIAs is the Bulgarian environmental law, adopted after its transition to a market economy. The law subjected almost any individual, business, or government activity to an EIA. The broad and unrealistic language in the Bulgarian legislation apparently deterred investment and resulted in ambiguity about the law and its implementation. See Bell, *supra* note 145, at 19.

¹⁶⁷ See generally ORO, *supra* note 1, at 47-61, for a description of the worst industrial sources of pollution operating in Cuba.

mental requirements, while allowing existing facilities time to adjust to these requirements.¹⁶⁸

Included in any “phase-in” legislation will have to be definite compliance schedules and adjustment periods, which may need to be set on an industry-by-industry basis.¹⁶⁹ Those schedules will need to be supervised by the government and penalties will have to be assessed in the event that the facilities miss their compliance deadlines.¹⁷⁰

Existing facilities should also be eligible for incentives to improve their environmental performance. The environmental incentives and penalties discussed earlier with respect to new facilities can be adapted for application to existing ones. The granting of tax incentives for adopting anti-pollution technologies, for example, would give older facilities motivation to improve their operations and reduce pollution levels.

The privatization of existing government-owned facilities would provide an opportunity for bringing about improvement, from the environmental standpoint, in the facilities’ operations and the remediation of the environmental impacts associated with these facilities. Environmental improvement and remediation requirements could be imposed on the new owners of privatized companies; however, such requirements would likely result in the reduction of privatization proceeds and would therefore need to be analyzed in the light of the transition government’s economic priorities.¹⁷¹ Alternatively, privatization proceeds could be earmarked for environmental remediation projects, whether or not they are related to the privatized facilities.

5.6. *Remediation of Accrued Environmental Impacts*

5.6.1. *Introduction*

As noted earlier, regulating the environmental impacts of future economic activities in Cuba will not make up for the decades of neglect that have led to soil erosion and salinization, water and air pollution, the destruction of forests and natural habitats, and the loss of biodiversity. To adequately address these very serious

¹⁶⁸ See Bell, *supra* note 145, at 24.

¹⁶⁹ See *id.*

¹⁷⁰ See *id.*

¹⁷¹ See LAWS AND LEGAL SYSTEM, *supra* note 156, at 173-75.

environmental problems, Cuba will have to pass specific legislation designed to deal with these problems.

The legislative efforts directed at environmental remediation have two aspects: (1) how to address the remediation needs in publicly-owned lands and bodies of water; and (2) what remediation obligations will be imposed on the owners of property that remains in private hands or which is conveyed to private parties by the State. These two issues will be discussed separately in this section.

5.6.2. *Remediation of Environmental Impacts in Publicly-Owned Areas*

The State, through its transition government, will need to assume responsibility for the reclamation of the vast areas of the country that are now suffering from environmental degradation. This responsibility will have technical, economic, and legal components, and will require a concerted government effort lasting perhaps a generation.

From the technical standpoint, the transition government will need to commission detailed studies of the environmental degradation at the various sites identified as "high priority," together with proposed remediation plans. The cost of performing such studies could be shouldered by grants or loans to Cuba from international lending agencies.¹⁷² Perhaps, they could be financed, in part, by the environmental technology industry, which may see the performance of such studies as the launching pad for subsequent contracts to implement the identified solutions.¹⁷³

The economic issues revolve around finding the massive sums of money that will be required to accomplish the reclamation projects. These funds will probably need to come from a combination of domestic and foreign sources, since the Cuban transition government will not have the resources to pay for the required clean-up projects.¹⁷⁴ The extent to which the transition government is successful in raising those funds, and the decision to allocate scarce government funds to environmental reclamation as opposed to other government priorities, will dictate the speed with which the reclamation process is implemented.

¹⁷² See Leiva, *supra* note 2, at 91-93.

¹⁷³ See *id.* at 93-94.

¹⁷⁴ See *id.* at 90-95.

There are a number of domestic sources that could be tapped to finance environmental reclamation projects. Environmental review and licensing fees, as well as fines collected from noncompliance with environmental regulations, could be placed in an environmental action fund, and used to finance cleanup efforts.¹⁷⁵

From the legal standpoint, the transition government needs to pass a statute to address the reclamation of sites where the environmental injury consists of the presence of hazardous materials.¹⁷⁶ The statute would, *inter alia*: (1) define and establish the levels of substances regarded as hazardous in various physical environments; (2) establish a trust fund for cleaning up abandoned or uncontrolled hazardous waste sites; (3) impose prohibitions and requirements concerning closed and abandoned hazardous waste sites; (4) provide for liability of persons responsible for releases of hazardous waste at these sites; (5) specify short-term remedial steps (e.g., removal actions that must take place when toxic releases or threatened releases requiring prompt response) and long-term remedial measures to permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life threatening; and (6) empower the environmental agency to respond directly to releases threatened releases of hazardous substances that may endanger public health or the environment.¹⁷⁷

It should be noted; however, that environmental degradation in Cuba is not limited to industrial pollution of the type dealt with by statutes like CERCLA. In Cuba, much of the environmental damage is the result of agricultural practices that are not confined to individual sites. Reclamation of the areas affected by those practices may require a combination of treatment methods and a significant change in agricultural techniques.¹⁷⁸

¹⁷⁵ Additional domestic funds could be made available through a process known as debt-swapping, in which a country's international debt is reduced in exchange for funding environmental protection measures. Debt-swapping has been adopted as a funding method for environmental projects in Poland and should be considered in Cuba as a way of financing its environmental programs; the money that would otherwise be devoted to reducing Cuba's international debt could be applied to environmental reclamation. *See Poland: Policy Instruments, supra* note 162.

¹⁷⁶ *See* Leiva, *supra* note 2, at 95.

¹⁷⁷ *See, e.g.,* Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. § 9601-9620 (2000).

¹⁷⁸ As a result of the ongoing economic crisis in Cuba, farmers have turned to using more primitive, but more environmentally benign, agricultural tech-

5.6.3. Remediation Obligations of Private Parties

The transition period laws dealing with remediation may impose different obligations on private parties who have ownership interests in assets in Cuba at the onset of the transition and on parties that acquire assets in Cuba through the privatization of state-owned enterprises.

At the time the transition gets underway, it is likely that there will be a number of foreign parties conducting business activities in Cuba, either through joint ventures with state-owned enterprises,¹⁷⁹ or through direct investments.¹⁸⁰ Such investors will have been subject to the environmental laws in place at the time of their investment and therefore should be fully liable under those laws for the remediation of any environmental damages caused by their activities.¹⁸¹ Thus, for example, companies drilling for and exploiting oil reserves, mining companies, and operators of industrial facilities such as cement plants, should be liable for the environmental damages caused by their operations.¹⁸²

It is fair to impose such liability on those who presently are conducting business in Cuba, because the need to comply with Cuba's environmental laws is a factor that sophisticated foreign

niques. These include fewer tillings per year, plowing using animal traction, and the use of bio-fertilizers and bio-pesticides, instead of their polluting chemical equivalents. See LEGACY, *supra* note 1, at 10:6-10:9. By applying these farming methods on a widespread basis and combining them with reforestation operations that reduce soil erosion, Cuba could reverse some of the damage caused to the soils by previous farming methods. On the other hand, these environmentally friendly agricultural methods result in low productivity, so there may be a temptation when economic conditions allow to return to the practices that prevailed before the crisis. See *id.* at 10:9.

¹⁷⁹ According to Cuba's Minister of Foreign Investment and Economic Cooperation, at the end of 1998 Cuba had 340 joint ventures with foreign investors, 57 of which were approved in 1998. See *Acelera en 1999 la Inversión Extranjera*, EL NUEVO HERALD, Mar. 28, 1999.

¹⁸⁰ Cuba's Foreign Investment Law, Law 77, authorizes the establishment of wholly owned foreign enterprises. See Ley 77 de la Inversión Extranjera arts. 12(c), 15, in GACETA OFICIAL 6 de septiembre de 1995. However, only one such enterprise has been approved to date. See *Cuba Allows First 100 Pct Foreign-Owned Investment*, REUTERS, Feb. 8, 1999.

¹⁸¹ Cuba's first joint venture with a foreign investor was completed in 1990, ten years after Law 33 went into effect. See LAWS AND LEGAL SYSTEM, *supra* note 156, at 106.

¹⁸² See ORO, *supra* note 1, at 47-56.

investors should have included in their investment decisions.¹⁸³ Pre-investment planning typically includes examining existing environmental laws to find ways of structuring the investment so that compliance with the laws is achieved while minimizing its impact on the cost of the projects.¹⁸⁴

The situation is somewhat different with respect to foreign investors who become involved in the privatization of state-owned enterprises ("SOEs"). The issue in those cases will be the extent, if any, to which an investor acquiring a state enterprise will be required to assume liability for environmental damage or hazards created by the enterprise while in the hands of the state.

One of the most serious obstacles encountered in the Eastern European privatization programs was the huge environmental liabilities accrued by the state-owned enterprises.¹⁸⁵ These liabilities often complicated and in many cases prevented the sale of the SOEs.¹⁸⁶ Those seeking to invest in former state-owned enterprises were not able to factor in the environmental cleanup costs because the extent of the environmental hazards associated with the assets they were to purchase would not be known until after the purchase.¹⁸⁷

The handling of environmental liabilities in Cuba's privatization program will present a difficult challenge. As discussed earlier, Cuban SOEs have generated large amounts of pollutants that have contaminated many regions of the island. The allocation of responsibility for cleaning up the damage to the environment caused by the SOEs is a policy-balancing issue that the legislators in Cuba will need to address.

¹⁸³ Anecdotal evidence suggests that businesses increasingly factor environmental issues into their foreign investment decisions. See, e.g., Norman E. Gelber, *Apparel Dominates Caribbean Conference*, BOBBIN, Feb. 1991, at 76 (including a comment by a Levi Strauss & Company executive).

¹⁸⁴ See Frederick R. Anderson, *Environmental Aspects to Foreign Investment in Latin America*, in INVESTMENT AND TRADE IN ARGENTINA, BRAZIL, CHILE, MEXICO AND VENEZUELA 151, 154-55 (PLI Commercial Law and Practice Course Handbook Series No. 643, 1992).

¹⁸⁵ See Randall S. Thomas, *The Impact of Environmental Liabilities on Privatization in Central and Eastern Europe*, 28 U.C. DAVIS L. REV. 165, 167 (1994).

¹⁸⁶ See Francine S. Kiefer, *Air Clears Up in Eastern Germany*, CHRISTIAN SCI. MONITOR, Mar. 19, 1992, at 12.

¹⁸⁷ See Sam Loewenberg, *Pollution Often Part of Package Deal with East European Firms*, L.A. TIMES, Aug. 28, 1994, at D3.

The approaches used in other countries range from very limited successor enterprise liability (a method employed by Germany during its privatization program for SOEs in former East Germany),¹⁸⁸ to full successor liability (represented by the United State's CERCLA regime).¹⁸⁹ In all likelihood, Cuba will not want to implement an environmental liability system that relies solely on state funding for the cleanup and environmental reclamation associated with enterprises that are turned over to the private sector. Therefore, absent a massive infusion of foreign economic assistance for this purpose, Cuba will have to adopt a legal framework that allocates the cleanup costs associated with privatized SOEs to those who acquire them. However, in order to avoid discouraging investment in the privatization of SOEs, the Cuban government may want to impose a cap on the liability to which a successor enterprise-owner could be subject. This approach recognizes the limited resources and options available to resolve the issue.¹⁹⁰

Whatever method is chosen, the applicable legislation should clearly define the liabilities to which the enterprises are subject; otherwise there is a substantial risk that the environmental legisla-

¹⁸⁸ Germany provides a good example of limiting successor liability to facilitate the sale of SOEs to investors. The German system for handling environmental liabilities did not promote private cleanup activity. See Thomas, *supra* note 185, at 170 n.11. "German law is intended to release investors in the new Eastern states from liability for past environmental damage resulting from preexisting waste sites. The law was designed to alleviate the fears of potential investors that they would acquire immeasurable environmental risks." *Id.* Such an approach may have worked for Germany, which could afford to finance the cleanup with state-funds, but a poor country, like Cuba, certainly could not bankroll such a system.

¹⁸⁹ The primary U.S. environmental liability law is CERCLA, *supra* note 177. CERCLA imposes strict liability for present and past owners and operators of contaminated vessels and facilities. See 42 U.S.C. § 9607. Purchasers of contaminated assets also face successor liability under CERCLA. See *id.* CERCLA has been criticized because of its enormous cost and the protracted litigation it has generated. See Allan Rickman & Scott Smith, *Environmental Law: An American Agenda Europe Should Avoid*, INT'L CORP. LAW 35-38 (1994). Since CERCLA requires that the polluter pay the cost of cleanup, in conjunction with imposing joint and several liability, complex litigation has erupted as involved parties seek to avoid liability. See *id.* Using a strict-liability scheme, such as CERCLA, during Cuba's privatization process would likely deter investors from acquiring SOEs offered for privatization.

¹⁹⁰ As an alternative, the costs of environmental cleanup could be passed on to the buyer of the enterprise in exchange for tax reductions or a period of market advantage. See Booksman, *supra* note 137, at 410.

tion will become an obstacle to the investors who try to acquire the enterprises.¹⁹¹ Therefore, the Cuban environmental legislation, in coordination with the country's privatization program, should contain clear guidelines defining the environmental obligations of acquirers of SOEs and the steps investors must take to achieve compliance.

5.7. *Other Laws*

In addition to those laws that deal directly with environmental protection issues, there are other laws that may further the environmental goals of the transition government. This section briefly discusses six of those laws.

5.7.1. *Tax Laws*

Cuba may use tax laws as a mechanism for providing incentives for environmental restoration initiatives by private parties. As indicated earlier, Cuba could imitate other countries that offer tax benefits to businesses that install anti-pollution devices and to parties who engage in research and development activities.¹⁹² Other tax incentives are also possible.¹⁹³

5.7.2. *Foreign Investment Law*

The foreign investment law promulgated during Cuba's transition should have few points of intersection with the environmental laws. The foreign investment code should be based on the

¹⁹¹ See Susan S. Cummings, *Environmental Protection and Privatization: The Allocation of Environmental Responsibility and Liability in Sale Transactions of State-Owned Companies in Poland*, 17 HASTINGS INT'L & COMP. L. REV. 551, 554, 562 (1994).

¹⁹² See Páez, *supra* note 138, at 629.

¹⁹³ Cuba's current Tax Code imposes an ill-defined tax on the "use or exploitation of natural resources and for the protection of the environment." Ley 73 del Sistema Tributario, art. 50, in GACETA OFICIAL, 5 de agosto de 1994. The tax is to be applied to any "juridical or natural persons, Cubans or foreigners, that use or are related in any way with the use and exploitation of the natural resources within the nation's territory." *Id.* art. 51. The details of the imposition of the tax are left to the discretion of the Minister of Finance and Prices, although tax reductions or exemptions are possible, at the discretion of CITMA. See *id.* art. 52. This is possibly the worst form of tax provision that could be formulated, for it provides no incentive for environmentally desirable conduct and creates a discretionary and unpredictable tax structure that is both ambiguous and open to abuses. See LAWS AND LEGAL SYSTEM, *supra* note 156, at 169-71.

principle of "guaranteed national treatment" under which a foreign investor is guaranteed to be subjected to the same treatment afforded local individuals and enterprises, hence foreign investors should be equal to domestic citizens with respect to the applicability of environmental laws.¹⁹⁴ There may be some procedural points of connection, however, in that the investment code (and the environmental laws) should include prohibitions against protracted evaluations of foreign investment projects for purposes of granting environmental licenses or performing EIAs.¹⁹⁵

5.7.3. Privatization Law

One of the top priorities of a transition government in Cuba will probably be to privatize many, if not most, of the country's state-owned enterprises.¹⁹⁶ As discussed in Section 5.6. above, the privatization legislation must be carefully coordinated with the environmental laws in order to address the prickly issue of accrued environmental liabilities due to prior operations of the enterprises while in the hands of the State.

On the positive side, the privatization program will provide a unique opportunity for the government to negotiate, on a deal-by-deal basis, agreements with the buyers for improvements in the environmental behavior of the enterprises. To accomplish this, the agency that is created to administer the privatization program should include among the rules that will govern the privatization process the requirement that environmental improvements be included, if applicable, in the terms of the agreement to be negotiated with the buyer.¹⁹⁷

¹⁹⁴ See LAWS AND LEGAL SYSTEMS, *supra* note 156, at 113.

¹⁹⁵ See *id.* at 116. Cuba's current Foreign Investment Act, Law 77, requires that joint venture applications by foreign investors be evaluated by CITMA for their potential environmental impacts and that CITMA decide whether to grant an environmental license, whether to order the performance of an EIA, and whether environmental monitoring and inspection mechanisms should be set in place. Ley 77 de la Inversión Extranjera, art. 55, in GACETA OFICIAL 6 de septiembre de 1995. The law also explicitly imposes on a foreign investor who inflicts damage or harm upon the environment the obligation "to re-establish the previous environmental situation, repair the material damage and indemnify the injured parties." *Id.* art. 56(2).

¹⁹⁶ See LAWS AND LEGAL SYSTEM, *supra* note 156, at 137-63.

¹⁹⁷ See *id.* at 148-49.

5.7.4. *Health and Safety Laws*

Environmental problems, such as air and water contamination, have the potential of becoming public health and safety issues. Indeed, there is some indication that the severe levels of water pollution may be having an adverse impact on public health.¹⁹⁸ The health and safety codes in effect during the transition period must reinforce the environmental protection legislation defining those pollution-related conditions (e.g., severe water contamination) that may affect public health and safety, and impose appropriate penalties on those who violate or contribute to the violation of health and safety standards.¹⁹⁹

5.7.5. *Industry-Specific Laws*

Some industry-specific laws may set forth provisions that complement the requirements in the environmental laws. For example, the mining laws may impose on mining concession-holders reclamation requirements that go beyond those in the environmental laws.²⁰⁰ Care should be taken, however, to avoid imposing inconsistent or unclear requirements on enterprise operators.

5.8. *Public Participation in Environmental Decision-Making*

The framework law and other environmental legislation in Cuba should establish a program of public information and education to increase the environmental understanding of the citi-

¹⁹⁸ See LEGACY, *supra* note 1, at 488-89.

¹⁹⁹ Cuba's Public Health Code (Decreto-Ley No. 54 of 1982) contains a number of sanitary control measures but does not specify standards such as limits on allowable levels of organic and inorganic contaminants in drinking water.

²⁰⁰ Article 41(c) of Cuba's current mining law ordains that every mining concession holder is obligated to:

preserve adequately the environment and ecological conditions of the area under concession, elaborating studies on the environmental impact and plans for preventing, mitigating, controlling, rehabilitating and compensating for the impact that comes from its activities, in those areas and also in the ecosystems in areas related to those that can be affected.

Ley 76 de Minas, art. 41(c), in GACETA OFICIAL, 23 de enero de 1995. The extent of these broad obligations and the mechanisms for enforcing them remain to be defined.

zenry and elicit public support for environmental initiatives. Gaining public support for environmental remedial actions will be particularly important, because those measures will be costly and may impose additional sacrifices on the population. Furthermore, the parties affected by increased environmental requirements will be likely to lobby strongly against their implementation. For those reasons, formal and informal public information and education mechanisms should be established in the framework law and implemented by the appropriate agencies.

Additionally, the transition government should promote environmental education and public dialogue on environmental issues.²⁰¹ Environmental education builds awareness of environmental issues for the future, and increases the likelihood that appropriate policies will be adopted by the government over time.²⁰² Such education will also establish an environmental consciousness that has not existed to date, but which is critically important to lasting environmental change.

Environmental laws in other countries guarantee public participation in the environmental decision-making process. In Poland, environmental action groups may bring environmental claims before administrative tribunals.²⁰³ In addition, environmental groups may review and comment on draft environmental laws before they are submitted to parliament.²⁰⁴ The Czechoslovakian government gave citizens the right to obtain information about the environment from public sources and private companies, and to bring claims under the environmental laws.²⁰⁵ Mexico's environmental law states that the public has the right to openly criticize environmentally harmful activities.²⁰⁶ Chile's law allows citizens to file suit if they are injured by environmental damage caused by others.²⁰⁷

To a varying degree, each of these measures promotes environmental education and public participation in the environ-

²⁰¹ See *Environment and Transition*, *supra* note 2, at 495.

²⁰² See *id.*

²⁰³ See Resource Renewal Institute, *Poland: Mechanics of Environmental Policy* (visited Mar. 31, 2000) <<http://www.rrl.org/envatlas/europe/poland/pl-mech.html>> [hereinafter *Mechanics*].

²⁰⁴ See *id.*

²⁰⁵ See *Environment and Transition*, *supra* note 2, at 491.

²⁰⁶ See Páez, *supra* note 138, at 679.

²⁰⁷ See *id.*

mental decision making process. A transitional Cuba may want to defer allowing citizen suits (except those based on direct injury as a result of environmental violations) until the country has achieved political and economic stability. Other provisions, however, should be promulgated giving the public the right to obtain environmental information from the government and obligating private companies to release environmental information relevant to their business activities. Furthermore, legislation should be issued requiring administrative agencies to provide notice periods for private parties to comment on proposed government or private actions having a potential environmental impact.²⁰⁸ Through these and other means, the transition government must instill in the Cuban society the environmental consciousness required for the success of its conservation and environmental protection policies.²⁰⁹

5.9. *Administrative Framework and Resolution of Conflicts Between Agencies*

Well-drafted environmental laws are of little value unless they are backed by an institutional structure that has sufficient enforcement capabilities.²¹⁰ Therefore, it is essential for Cuba to create and maintain credible and effective institutions to manage environmental policies.²¹¹ During, and after, Cuba's transition period, the administrative agencies responsible for overseeing the island's environmental matters should be given political and fiscal independence.²¹² Environmental oversight activities such as licensing and environmental impact assessments must be administered independently and without the threat of central government pressure.²¹³ Since the experiences of Cuba show that governments

²⁰⁸ Notice and comment provisions may be similar to those stated in the United States Administrative Procedures Act. 5 U.S.C.S. §§ 553(b), (c) (1999). Notice should include advising the public of pending applications for environmental licenses for public or private projects having significant potential impacts on the environment.

²⁰⁹ See Barba & Avella, *supra* note 44, at 279.

²¹⁰ See *Environment and Transition*, *supra* note 2, at 492.

²¹¹ See *id.* at 491.

²¹² See *id.*

²¹³ The lack of independence in the performance of environmental evaluations has become evident in Cuba since the government created GEOTECH, a joint venture between the State and a Spanish corporation. GEOTECH performs 95% of all EIAs in Cuba. Most of GEOTECH's clients are in the min-

are not good at policing themselves, the institutional framework must not allow the public sector to regulate itself directly or indirectly,²¹⁴ or to have the environmental regulator engage in economic activities.

Another reason for establishing independent environmental administrative agencies in Cuba is the need to foster confidence in the impartiality of the regulators in the eyes of foreign and domestic investors. Mexico is an example of a country that has increased the authority and independence of its environmental agencies.²¹⁵ An extensive administrative reorganization in 1994 created a more independent environmental regulatory structure that established decentralized entities and investigative institutes.²¹⁶ Mexico also delegated to the Secretariat of the Environment the authority to issue all official Mexican standards pertaining to the use of natural resources, waste water discharges, mining and hazardous wastes, and the management of solid wastes.²¹⁷

In addition to providing independence and empowerment to the agency via the environmental framework legislation, the transition government must establish a method for inter-agency cooperation and dispute resolution.²¹⁸ Since environmental laws usually affect many government agencies, it is paramount that cooperation among the pertinent agencies be fostered in the legislation.²¹⁹ Inter-agency conflicts restrict environmental planning and paralyze the implementation of environmental policy.²²⁰

ing, tourism and agricultural industries, in all of which the state has a controlling interest. See Evenson, *supra* note 51, at 519 n.232. This arrangement leaves the government in charge of administering the EIAs for its own industries, which creates a serious conflict of interest and questions about the integrity of the EIAs.

²¹⁴ See *Environment and Transition*, *supra* note 2, at 492.

²¹⁵ See 1996 COMMISSION FOR ENVIRONMENTAL COOPERATION ANN. REP. 80-87 [hereinafter CEC].

²¹⁶ See *id.* One of the decentralized entities is the office of the Federal Attorney General for Environmental Protection ("PROFEPA"). PROFEPA is responsible for enforcing environmental laws, regulations and Official Mexican Standards. There are three deputy attorneys general each devoted to a different aspect of environmental enforcement. See *id.* at 83.

²¹⁷ See CEC, *supra* note 215 (discussing the role of the Secretariat of the Environment).

²¹⁸ See Páez, *supra* note 138, at 683.

²¹⁹ See *id.*

²²⁰ See *id.*

Recognizing the inter-agency problems that may occur under any political regime, not only socialist ones, Chile integrated an inter-agency cooperation requirement into its environmental law.²²¹ The provision requires the Chilean National Environmental Commission seek to standardize any environmental criteria, requirements, conditions, background, certificates, proceedings, technical demands and procedures that the ministers and other competent State bodies may establish.²²²

Inter-agency conflicts may also be mitigated through decentralization. Cuba's diverse environmental problems and varying degrees of pollution among the provinces suggests the establishment of localized administrative structures. Local administrators usually have more knowledge than a central government agency about environmental threats in their particular locality, and are thus better suited for prioritizing and addressing environmental concerns. The decentralized nature of such a structure may also free local agencies from central government pressure and foster public participation.²²³

The Polish Parliament created a decentralized administrative system that minimizes inter-agency conflicts and grants local decision-making power. Poland created the State Inspectorate for Environmental Protection, which is responsible for providing continuous reports to the public on the condition of the environment in Poland.²²⁴ In addition, Poland delegated the duty of environmental policy implementation to provincial offices ("viviódships").²²⁵ The powers and independence of these provincial offices are substantial: they issue permits, collect fees, and administrate their own environmental funds.²²⁶ The viviódships may also set stricter standards for emission and effluent limits than those required by the national government if these are necessary to meet ambient quality requirements.²²⁷ Municipal envi-

²²¹ *See id.*

²²² *See id.*

²²³ There is a decentralization provision in the Cuban environmental law, but the extent to which local agencies will be able to exercise their powers remains to be seen. *See Ley 81 Del Medio Ambiente*, arts. 15, 16, *in GACETA OFICIAL*, 11 de julio de 1997.

²²⁴ *See Mechanics, supra* note 203.

²²⁵ *See id.*

²²⁶ *See id.*

²²⁷ *See id.*

ronmental offices are responsible for monitoring compliance and issuing permits at the local level.²²⁸ These local offices also have authority over wastewater treatment and waste management.²²⁹

6. CONCLUSION

Some scholars studying the environmental situation in Cuba have expressed the view that the main problem with the country's legal framework is not that it is inadequate, but that it is inadequately enforced. As one commentator put it:

The State, as the primary economic agent in the society, has largely been responsible for the environmental problems currently facing Cuba. Agricultural, industrial, and other economic activities have been pursued with little regard for the environmental consequences. While the right things have been said about the need to protect the environment, this rhetoric has not been translated into practice. The sad reality is that within the framework of Cuba's authoritarian political structure, the impressive environmental legal regime, which started with the Cuban Constitution of 1976 and manifests itself today in the Basic Environmental Law, has remained impotent in the face of environmental infractions perpetuated by the State.²³⁰

While this view is clearly correct insofar as it underscores the reluctance of Cuba's current government to enforce environmental laws against itself, the discussion of this Article demonstrates that, even under the new framework represented by Law 81, Cuba lacks an adequate set of environmental laws and regulations, a truly independent agency empowered to administer the laws, and workable enforcement mechanisms that allow both public and private parties to obtain redress from environmental transgressions. Without those elements in place in the manner discussed in this paper, a change in governmental attitude towards environmental issues (such as hopefully would occur in the event of a free-market transition) would not be enough to "turn the

²²⁸ *See id.*

²²⁹ *See id.*

²³⁰ Ramlogan, *supra* note 17, at 100-01.

corner” on the environment and start restoring Cuba to its prior status, in Christopher Columbus’s famous phrase, as “the most beautiful [island] that human eyes have ever seen.”²³¹

²³¹ CHRISTOPHER COLUMBUS, *THE DIARIO OF CHRISTOPHER COLUMBUS’S FIRST VOYAGE TO AMERICA* 119 (Oliver Dunn & James E. Kelly, Jr. trans., Univ. of Okla. Press 1989).

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