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Protecting Cuba's Environment: Efforts to Design and Implement Effective Environmental Laws and Policies in Cuba

ABSTRACT

In the early 1990s, when Cuba was in the thick of its severe economic crisis following the collapse of the Soviet Union, the Cuban government indicated that protection of the environment and natural resources would henceforth be top policy priority. The stage was set at the Rio de Janeiro Earth Summit in 1992 when President Fidel Castro delivered a high-profile speech embracing the concepts of environmental protection and sustainable development. As a consequence, the government amended its constitution and initiated a sweeping series of reforms aimed at redressing past environmental harms and minimizing future degradation of air, water, and land resources. These actions signalled the government's intent that economic recovery go hand in hand with initiatives to reduce pollution and address new threats to the island's abundant and rich biodiversity. The present article examines the efforts of the new Ministry of Science, Technology, and Environment (CITMA), in conjunction with other agencies and bodies to design and implement a comprehensive vision for environmental protection and sustainable development. Addressing severe environmental problems and preventing future ones depends first on a solid legal framework. Implementation and enforcement must then follow. The article summarizes some of the country's new environmental laws and regulations, particularly those that pertain to conservation of marine and coastal resources and the environmental review of proposed construction projects. This article also highlights some of the progress made to date in implementing the new environmental legal framework still under development, and discusses some of the factors that have impeded full implementation.

RESUMEN

A inicios de los noventa, cuando Cuba se encontraba inmersa en el periodo mas difícil de la crisis económica que siguió al colapso de la Unión Soviética, el gobierno señalo que la protección del medioambiente y los recursos naturales seria máxima prioridad política en lo sucesivo. Una nueva etapa comenzó en 1992, cuando el Presidente Fidel Castro dedicó un discurso de alto perfil que incluyó los conceptos de protección ambiental y desarrollo sustentable. Como consecuencia, fue enmendado el Articulo 27 de la Constitución de la Republica de Cuba y se inicio una serie de reformas radicales orientadas a

reparar los daños al medioambiente y a minimizar la degradación de recursos como el aire, el agua y los suelos. Estas acciones indicaron la intención del gobierno de reactivar la economía, al mismo tiempo aplicando iniciativas para reducir la contaminación y enfrentar nuevas amenazas para la rica y abundante biodiversidad de la isla. El presente artículo analiza los esfuerzos del Ministerio de Ciencia, Tecnología y Medioambiente (CITMA), en conjunto con otras agencias e instituciones para diseñar e implementar un marco coherente para la protección del medioambiente y el desarrollo sustentable. Enfrentar los severos problemas ambientales y prevenir los nuevos depende, en primer lugar, de la implementación de un marco legal sólido y su consecuente cumplimiento. Este trabajo resume algunas de las nuevas regulaciones ambientales, implementadas en el país, particularmente aquellas pertenecientes a la protección de los recursos marinos y costeros y la evaluación ambiental de propuestas de proyectos constructivos. Este articulo también destaca algunos progresos logrados, hasta la fecha, en la implementación del nuevo marco legal ambiental, aun en desarrollo, y comenta algunos factores que obstaculizan su coherente aplicación.

Introduction

Cuba is frequently referred to as the ecological crown jewel of the Caribbean, with more than 3,000 miles of coastline, spectacular coral reefs, massive mangrove wetlands, tropical wet forests, coastal mountains, caves, and rich biodiversity unmatched in the region. Long stretches of coastline remain undeveloped and the shallow ocean waters around the island harbor marine diversity that is unparalleled in the hemisphere.[1] Increasingly, many of the remaining natural areas, both terrestrial and marine, are being protected under the country's National System of Protected Areas, prompting some to refer to Cuba as an "ecological bastion" and the "biological superpower of the Caribbean."[2] But despite the scenic beauty and its relatively abundant natural resources, Cuba is suffering from more than 200 years of environmental degradation caused by exploitation of minerals and other natural resources, deforestation, lack of pollution abatement, intensive sugar production and processing, poor farming and other land use practices. Environmental neglect that occurred before 1959 was not adequately addressed in the 1960s and pollution problems intensified when Cuba embraced the so-called "Green Revolution," an era that ushered in intensive, industrial-scale agriculture and heavy use of chemical fertilizers.[3] In 1997, at the direction of top government leaders, the new Ministry of Science, Technology, and Environment (CITMA) published *National Environmental Strategy*,[4] which described severe environmental problems still plaguing the country and hampering economic development. The list included extensive soil erosion, deforestation, inland and coastal water pollution, increasing loss of biodiversity, and poor sanitation in cities and rural areas. Officials also recognized that the potential for restoring natural systems and mitigating existing problems was compromised by a suite of emerging environmental threats,

especially those associated with the country's rapid expansion of its tourism industry in fragile coastal areas.[5]

The future of Cuba's environment, and its prospects for developing its economy in a manner compatible with environmental quality and natural resources conservation, is at the center of a growing international debate among academics, scientists, government officials, conservation organizations, and others. Few dispute the richness of Cuba's natural environment or the challenges associated with reversing a long history of environmental neglect.[6] The present debate instead focuses on whether Cuba will be able to achieve meaningful levels of environmental protection while it is still hurting economically and isolated politically. The Cuban government has developed a modern and sophisticated plan for environmental protection and sustainable development and has started using it. The question now is whether government leaders can and will do what it takes to put the plan on the ground. Or, in spite of the country's new, far-reaching environmental laws, will Cuba instead subordinate environmental protection goals to economic development priorities like so many other developing countries have done?

Much of the commentary in this debate proceeds narrowly along ideological grounds, with neither an adequate analysis of the laws and policies that Cuba has adopted over the past decade nor an objective assessment of the practical challenges any government faces in building and implementing an entirely new environmental protection regime. Some argue that Cuba's socialist system, in practice, has been premised upon "conquest and subjugation of the natural environment" and that the economic development model used in Cuba — like that practiced in the former Soviet Union and Eastern Bloc countries — has resulted in widespread pollution and ecological degradation due to an overemphasis on increasing production of sugar and other export commodities.[7] These critics argue that the country's more recent public embrace of environmental protection and sustainable development is shallow or insincere and that the top levels of the government lack both the will and the resources to implement new environmental laws. They conclude that future prospects for achieving higher levels of environmental quality are low, unless and until the country makes a transition to a market-based economy and a more democratic form of government.[8] These commentators, however, tend to downplay or overlook several issues. First, much environmental degradation in Cuba occurred before 1959. For example, by 1959 more than 70 percent of the island's forests had already been cut to make way for sugar production. Soil degradation, loss of biodiversity, lack of sanitation, and unsafe drinking water were just some of the other environmental problems prevalent in Cuba prior to 1959. Second, the path of development adopted by Cuba and the mistakes made were hardly shortcomings unique to socialist or developing countries. Development patterns in market-based societies have resulted in many of the same kinds of

environmental problems. A third factor involves the practical effects of the United States embargo against Cuba which has, in some significant measure, hampered Cuban efforts to obtain environmental control technologies and other goods and services by prohibiting importation and by obligating Cuba to pay high prices for outdated technologies. Finally, critics tend to be dismissive of the new institutions, laws and processes that have been put in place in recent years, if they mention them at all.[9]

Conversely, some commentators paint an overly optimistic and arguably simplistic picture of the future. They credit Cuban socialism with providing both a solid theoretical as well as a practical underpinning for environmental protection that is missing in free-market, capitalist societies. Professor Levins, for example, has written that "socialist social arrangements and ideological priorities made ecological development an almost 'natural' correlate of the economic and social development and of the commitment to improving the quality of life as the primary goal of development . . . Socialism made ecological choices more likely."[10] According to this view, Cuba's elevation of science as an academic discipline and its promotion of a scientifically literate and knowledgeable populace over the last four decades have provided the foundation and the popular support for an economic development model that minimizes adverse ecological impacts. Because socialism is compatible with environmental protection, planners will necessarily be able to avoid or minimize the threats associated with coastal tourism, mining, oil and gas development and other sectors that are traditionally harmful to the environment. This line of argument asserts that government support for stringent environmental requirements will remain strong in the future, because of its governing principles and notwithstanding a litany of obstacles including intensifying development pressures, differing points of view among government agencies, scarce money for capital improvements, and limited resources for enforcing environmental compliance. The theory underlying this point of view has little empirical support in Cuba or elsewhere.[11]

The future of environmental reforms in Cuba will be influenced by a variety of cultural, economic, social, and political factors. Ultimate success or failure, however, will likely depend more on thorough laws, money, human capital, public involvement in environmental decision making, use of incentive-based tools, and international support. Strong environmental laws are a necessary foundation for sustainable development, but success will only occur with the continuing political will to implement and enforce them. On this point, commentators on both sides of the ideological debate tend to agree. This article presumes that if the government follows through on the environmental reforms that it has initiated, a high level of environmental protection can be achieved in a manner that is compatible with Cuba's political system. These reforms are also

achievable if and when the United States eases or lifts its economic embargo on Cuba, if a strong legal framework is preserved.[12]

The Emergence of Modern Environmental Law in Cuba

> The credo of the Western World is that, if the environment is the problem, the economy is the answer. First things first. A rising economy not only lifts all boats, it raises environmental consciousness and provides the fuel for pollution controls and sound resource management. This credo, however, has a corollary, found at all levels of government in this hemisphere . . . when economic times are hard, environmental policies take a back seat, if they even stay in the vehicle. First things first.[13]

President Fidel Castro's speech at the United Nations Conference on Environment and Development in Rio de Janeiro in 1992 ("Rio Summit") signalled that Cuba would defy conventional wisdom and henceforth make environmental protection a higher priority.[14] Faced with its worst economic crisis since the 1959 revolution,[15] the Cuban government could easily have embraced the rhetoric of the Rio Summit while postponing meaningful environmental reforms until the restructuring of the economy began to produce tangible results. In fact, few would have predicted Cuba to do otherwise.[16] In policy debates worldwide, economic development and environmental protection are often pitted against each other and miscast as incompatible goals; it is particularly rare for governments anywhere to propose, adopt, or enforce stricter environmental requirements during times of economic crisis. Cuba's emergent environmental reforms are particularly noteworthy because its economic strategies have been predicated in large part on making international tourism its number one industry. Tourist facilities, particularly in coastal areas, are resource intensive and significantly alter natural systems and produce substantial amounts of water, land, and air pollution. Examples of sustainable beach resorts in the Caribbean (or elsewhere for that matter) are few and far between.[17]

Shortly after the Rio Summit, the Cuban National Assembly amended the 1976 Constitution to incorporate sustainable development principles and to affirm that both the state and the Cuban people have a duty to protect the environment for the benefit of present and future generations.[18] Following the constitutional change, environmental reforms continued with the formal adoption of the Rio Summit's environmental principles, embodied in Agenda 21 of the United Nations in 1993,[19] the establishment of a new ministry dedicated to the environment in 1994, the adoption of a National Environmental Strategy and the Law of the Environment in 1997, and the enactment of numerous implementing laws, regulations, and policies over the next few years.[20]

With the environmental reforms adopted after the Rio Summit, the Cuban

government intended to overhaul ineffective environmental laws and policies that had been in place since the 1970s. Prior to the mid-1990s, jurisdiction over environmental regulations and the management of natural resources had been distributed among a large number of institutes, agencies, and centers. In 1976 the government formed the National Commission for Environmental Protection and the Rational Use of the Natural Resources (COMARNA), which was subordinate to the State Committee on Science and Technology, in order to coordinate the activities of the myriad entities. The Committee on Science and Technology was abolished in 1980, but its functions were transferred to the Academy of Sciences. In 1981 the National Assembly approved Law 33, *On the Protection of the Environment and the Rational Use of Natural Resources*, which directed the Academy of Sciences to present to the Council of Ministers a plan for the organization, structure, and operation of the new environmental regulatory system. The process of developing that plan took eight years and culminated in the approval of Decree-Law 118 of 1990, *On the Structure, Organization, and Functioning of the National System on the Protection of the Environment and the Rational Use of Natural Resources*. The Law reestablished COMARNA and placed it in charge of the environmental regulatory system. Under DL 118, COMARNA was a permanent commission assigned to the Council of Ministers, and it was composed of a president, vice president, secretary, and twenty-six representatives of agencies of the Central Administration of the State, as well as the presidents of the Provincial Commissions of Environment associated with the respective territorial governments. The principal mandate of COMARNA was to develop environmental regulations (subject to the approval of the State) and to oversee and enforce their implementation. Although the new COMARNA reported directly to the Executive Committee and operated independently of any particular ministry, it remained a weak institution, relatively effective in facilitating communication and coordination among governmental entities, but ineffective in promulgating environmental regulations.[21] The principal reasons for the Commission's weakness seemed to be its lack of executive authority and the fact that it lacked the capacity and legal tools, such as the environmental impact assessment and a system of environmental licences,[22] necessary to implement environmental standards. COMARNA also was burdened with an institutional conflict of interest because governmental bodies that comprised the Commission were vested with both the responsibility to exploit natural resources and to protect them.

In 1994, prompted by the deepening economic crisis, the government initiated a comprehensive reorganization of governmental administration, intended to downsize and decentralize the bureaucracy in Havana and to make agencies leaner, more focused, and more effective.[23] The State Council replaced COMARNA with the more powerful Ministry of Science, Technology, and Environment (CITMA),[24] marking the first time in the country's history

that a cabinet-level agency was established for the environment. CITMA emerged without any responsibility for natural resource exploitation and thus in a much better position to develop and enforce environmental protection measures.[25]

A Blueprint for the Environment

Upon its formation, CITMA almost immediately turned its attention to developing an assessment of Cuba's air and water quality, land degradation, biodiversity resources, and human settlements, among others. As noted above, in 1997 CITMA finalized its first National Environmental Strategy ("Strategy"), setting the direction for a set of specific environmental laws, regulations, and initiatives needed to implement the vision for environmental protection. The Strategy asserts that sustainable economic and social development does not represent a new strategy, but a *continuation* of one inherent in the socialist principles underlying the model of government.[26] That said, the Strategy acknowledges that over the last four decades ecological concerns, though generally recognized, had consistently been low on the list of policy priorities.[27] A lack of money, pollution control technologies, and other environmental infrastructure had further impeded progress toward environmental protection goals.[28] The Strategy was the first in a series of reform-minded measures written as the government was putting in place economic and governmental reforms. The next step was to develop laws to achieve the Strategy's vision. CITMA officials recognized early on that the existing environmental law, Law 33 of 10 January 1981, though arguably one of the pioneer environmental laws in Latin America at the time it was enacted,[29] had never been successfully implemented or enforced.[30] Law 33 was also noticeably outdated and had many regulatory gaps. Proposed new economic developments in tourism, mining, offshore oil and gas resources, and other sectors raised concerns that existing environmental laws, even if obeyed, would not adequately protect sensitive coastal ecosystems or sufficiently control discharges of pollution to the air, land, or water.[31] The existing law also did not adequately address the loss of biodiversity, the exhaustion of the ozone layer, global climate change, or the transportation of hazardous wastes across borders.[32] Finally, Cuban environmental agencies lacked the legal authority to use various regulatory and nonregulatory tools common in other countries, such as the environmental impact assessment and tax and other economic and market-based incentives.

The Law of the Environment

CITMA officials began work on an ambitious new environmental framework law in 1995, concurrent with their work on the Strategy.[33] CITMA's efforts to craft the new law drew immediate attention from other quarters within the government and brought to the surface different perspectives as to how far and

fast the country should go in imposing environmental controls on economic activity. Many topics addressed in the proposed legislation were new in the domestic environmental practice and even in the legal field in general, including the use of economic instruments to influence the behavior of regulated sectors. Therefore much discussion focused on assessing the feasibility of using state-of-the-art environmental policies and tools in use in other countries. Negotiations over the proposed legislation included representatives from the ministries of Economy and Planning, Foreign Investment, Basic Industries, Tourism, and others with jurisdiction over economic reforms and/or resources management (e.g., water, oil, minerals). Several government officials predictably took the position that solving the economic crisis should be the highest priority; they feared that the proposed new environmental law would obstruct economic development, and some even asserted that "environmental protection is a game for the rich."[34] These officials were hesitant to impose potentially costly environmental standards on new construction projects or otherwise to constrain the development of new industries. The draft law also raised concerns because it strengthened CITMA's regulatory authority and clarified that the new ministry would have jurisdiction to condition or veto projects of other ministries that did not comply with new environmental requirements. But while many urged a *go slow* approach, others advocated for a radically expanded law with strong sanctions, including stiffer penalties for environmental violations. These arguments were particularly prevalent among the deputies to the National Assembly, most of whom had little or no direct administrative responsibilities in natural resources management or pollution control. Many of these deputies also had a background in local government and a closer relationship with local environmental problems in their regions.

After extensive debate and numerous revisions, the National Assembly formally approved Law 81, known as the Law of the Environment, in July 1997. The law — essentially a compromise between the different positions, but still ambitious in its rigor and scope — sets forth environmental objectives, an administrative framework within which CITMA and other environmental agencies and institutes operate, and a set of legal instruments that agencies must use in carrying out their many mandates. Law 81 also provides the authority and mandate for the development of a large body of substantive and procedural environmental laws and regulations, including laws, decree laws and resolutions on coastal zone management, the protection of natural areas, the protection and sustainable use of genetic resources, water management, hazardous wastes, chemicals, and other issues commonly addressed by national-level environmental laws.[35] Among the six stated objectives in Law 81, there are two that expressly provide for a new and meaningful role for the general public in environmental decision making.[36] The law tracks Principle 10 of the Rio Declaration by establishing the public's legal right to access to informa-

tion, access to participation, and access to justice. If faithfully implemented, these provisions promise an unprecedented role for nongovernmental organizations, trade associations, and the general public in the realm of policymaking and decision making on particular projects and activities of government agencies, state-owned entities, and foreign investors.

A Principal Institution for the Environment

Law 81 is the organic act for CITMA and codifies the ministry's role as the lead environmental regulatory agency "in charge of proposing environmental policy and guiding its execution through the coordination and control of the nation's environmental management, promoting its coherent integration in order to contribute to sustainable development."[37] The minister of CITMA oversees regulatory agencies, scientific and research institutes, the national parks and other protected areas, museums, aquariums, and the national zoo. The ministry's reach also extends throughout the country in its fifteen territorial units — one in each of the provinces, and on the Isle of Youth. Municipal specialists, with broad responsibilities, have been designated for each of the country's 169 municipalities. Within CITMA there are a number of agencies and other institutions dealing with environmental and natural resources management. The *Environmental Directorate* (DMA) is charged with writing and overseeing the implementation of a wide range of environmental laws, decree laws, decrees, and resolutions. DMA also monitors the policies, plans, and activities of other ministries to ensure that environmental concerns are addressed. DMA's officials also serve as part of the team of the country's principal environmental negotiators at the United Nations and in other international forums. The *National Center for Protected Areas* is charged with planning and proposing policies regarding the National System of Protected Areas, and with administering the system. The *Center for Environmental Management, Education, and Information* is responsible for the coordination and execution of environmental actions, such as coordinating the management of chemicals, cleaner production, and the treatment of industrial wastes. In 2002, with the goal of strengthening its regulatory capacities, CITMA integrated regulatory entities on environment, biosafety, chemical security, and nuclear safety into a single agency, the *Regulatory Office*. Finally, the *Environmental Agency* is a collection of research institutions and other agencies responsible for scientific research and services with an emphasis on the environment. The principal mandate of this agency is to support the policies and management of CITMA, by providing scientific research and environmental services.

Laws and policies enacted during and since the "Special Period" mandate greater coordination and communication among ministries and other governmental bodies than was typical in the preceding three decades. Law 81 reinforces the mandate for integrated decision making by providing an explicit and

meaningful role for CITMA in the planning and decision-making processes of other ministries. Thus, in addition to CITMA's capacity as regulator and resource manager, Article 12 of Law 81 establishes its role as a *coordinator* ("coordinate and integrate the introduction of required aspects of environmental protection in the actions taken by state agencies and bodies"), and as an *arbitrator* ("reconcile discrepancies among agencies and bodies and other entities in relation to environmental protection and the rational use of natural resources"). CITMA is expected to participate in the planning and policymaking activities of other ministries, and its seat at these tables puts it in an unprecedented position to ensure that environmental factors are considered in planning and economic development.

CITMA is the principal, but not only, ministry with jurisdiction over the environment natural resources management. For example, the Ministry of Fisheries oversees and regulates ocean and freshwater fisheries. The Ministry of Agriculture (MinAg) manages the country's reforestation efforts and controls its production of timber and other forest products.[38] MinAg also manages a number of nature reserves and other protected areas, through the National Enterprise for the Protection of Flora and Fauna. The Ministry of Basic Industries oversees the exploitation and management of the country's mineral reserves and onshore and offshore oil and gas deposits.

Legal Instruments

Upon its formation in 1994, CITMA was little more than a collection of agencies and institutes with a mandate, but without the wherewithal to fully exercise its authority or get much accomplished. To get started, CITMA organized its work along three distinct lines.

The first and most immediate task consisted of approving a series of resolutions to begin putting environmental requirements on the ground. The first two of these, approved in 1995, established the environmental impact assessment[39] and the state environmental inspection process.[40] Although resolutions have limited legal force, these initial measures enabled CITMA to begin using some basic tools for environmental management and were a fundamental first step in the ultimate elaboration of Law 81 of the Environment.

Second, CITMA took steps to influence legislation governing other ministries to ensure that environmental impacts are fully considered in their planning and policymaking processes. These efforts resulted in the environmental provisions that appear today in the laws and decree laws on the tributary system in 1994 (Law 73), mining in 1994 (Law 76), foreign investment in 1995 (Law 77), and fisheries in 1996 (Decree Law 164), among others. For example, Law 77 requires that the Ministry of Foreign Investment and Economic Cooperation consider the environmental implications of potential new projects funded by foreign investors.[41]

The third line of work, as well as the most ambitious, was the one that led to the development and approval of Law 81. Law 81 provides CITMA and its agencies with a number of modern tools and instruments to use in building a functioning system for environmental protection. Among these instruments and tools are the environmental planning process, the environmental license, the environmental assessment, the National Environmental Information System, the National Fund for the Environment, and a range of enforcement tools including the power to levy fines and penalties for environmental infractions. The initial challenges for CITMA lay in determining how these tools would work in practice, in finding and training sufficient numbers of personnel in Havana and in the provinces to administer them, and in securing the necessary funding.

Challenges for Implementation

Since 1995 CITMA has been engaged in institution building and in developing the specific laws and policies needed to advance environmental reforms.[42] The ministry has secured, in record time, the adoption of an impressive number of environmental laws, decree laws, resolutions, and guidelines including measures addressing coastal zone management, environmental assessments and licensing, inspections, protected area management, and a host of others.[43] But while the process of lawmaking has been accelerated in comparison to the relatively lengthy process that is typical in the United States and other countries, it has not been haphazard, nor has it occurred without consideration of environmental laws and policies in place throughout Latin America, the United States, and Europe.[44] But drafting new laws was just the beginning of what would necessarily be an arduous process of building and putting into place a new and entirely different approach to environmental protection for Cuba. DMA officials acknowledged early on the challenge of promulgating a whole series of new supplemental environmental laws and regulations and asserted that implementation of Law 81 was ultimately a "wider phenomenon that demands political will and material, financial, and human resources."[45] Creativity, inventiveness, and a healthy dose of risk-taking could have been added to that list.

In 1999, DMA identified eight specific challenges or tasks associated with implementing Law 81, including the following three:[46]

1. To finalize draft laws and policies, particularly decree laws on the National System of Protected Areas and on the administration of the coastal zone.
2. To implement the exercise of the right to a healthy environment that guides the Law, and of other rights associated with this, such as the right to information and the right to participate in decision-making processes.

3. To establish mechanisms for citizen consultation, especially for the relevant processes of Environmental Impact Evaluation.

As described below, CITMA has approached these three challenges with varying degrees of effort and focus, though it has taken some steps to address each of them. The most progress has been made in finalizing specific laws and regulations, particularly with the approval of decree laws on the National System of Protected Areas (DL 201) and coastal zone management (DL 212), as well as a decree law on administrative sanctions (DL 200). All of these measures are summarized below. The government has also enacted an important new law on the conservation of forests (Law 85/98), and a decree law on biosafety (Decree Law 190).[47] Some important regulations remain in draft form, including rules regarding biological diversity and access to genetic resources. Laws governing land and water pollution, as well as land use planning, are still outdated despite the mandate of Law 81 that such regulations be updated by no later than 1999.[48] Some limited progress, as discussed below, has also been made to enhance opportunities for the general public to participate in the environmental decision making process, most notably in the context of the environmental impact assessment process. Less progress has been made to modify judicial procedures to allow for citizens to challenge administrative decisions or seek recourse from damages caused by environmental violations.[49]

The main challenge for the implementation of environmental laws and regulations in Cuba, as in any other developing country, comes from the pressing need to facilitate economic development and to remove barriers (real and perceived) to such development. Where pressures to grow the economy are great, environmental concerns are typically assigned a lower priority because of the perception that the environmental rules and procedures can delay new projects or encumber such projects with costly controls.[50] Another factor affecting implementation of environmental laws in Cuba lies in the fact that the state assumes the role of property owner, investor, developer, and environmental regulator simultaneously. Entities charged with implementing key social and economic programs (e.g., food, health, education) are also subject to environmental regulation. Conflicts and tensions especially arise when the strict application of the environmental standards, due to the age and condition of many facilities, might result in the closing of a factory unless costly upgrades are made. In such situations, environmental regulators often recognize a special need to accord weight to the potential social and economic impacts associated with proposed environmental controls.

Protection of Coastal Areas

Negotiations over a new law governing management of coastal areas began in 1987, preceding by several years the government's decision to embrace the

principles of sustainable development as official public policy.[51] In the mid-1980s, Cuba launched an initiative to develop international tourism, beginning with an expansion of existing coastal resorts in Varadero, Cayo Coco, Cayo Guillermo, and the group of keys named "Jardines del Rey," in the northern part of the island of Cuba.[52] Existing laws were not sufficient to guide the increasing amount of tourism and other economic development planned to take place along shorelines, prompting officials to begin drafting a more comprehensive law. These early drafts of a new coastal law were aimed primarily at regulating occupation and use of coastal areas, not on reducing pollution in coastal areas or protecting sensitive ecosystems per se.[53] CITMA broadened the scope and purpose of the draft and ultimately patterned the coastal zone management decree law in part after individual state laws in the United States, Spanish law, and its own Law of the Ports.

As ratified in August 2000, Decree Law 212, *Coastal Zone Management*, is a type of zoning law designed to avoid and mitigate impacts to lands and waters from new construction and other activities. The law provides for two zones where new construction is either prohibited or restricted: the "coastal zone" and its "zone of protection." The coastal zone extends inland for a minimum of twenty to forty meters, depending on the type of coastline, and is generally off-limits to permanent structures, subject to a limited exemption for water or coastal-dependent structures and activities, such as docks, piers, or marinas. The decree law expressly bans some structures and activities in the coastal zone, including new and expanded hotels, residences, waste disposal, most vehicles, and the extraction of sand. Adjacent to the coastal zone is another buffer area called the "zone of protection" that extends inland another twenty to forty meters. DL 212 prohibits most permanent structures in the zone of protection, including hotels, residences, and other structures. The law provides additional specialized protections for small islands and keys. In designing a legal system for protecting coastal areas, CITMA embraced the principles of integrated coastal zone management (ICZM).[54] In the coastal areas targeted for tourism, the setbacks mandated by DL 212 are significant and, if strictly enforced, will do much to protect vulnerable wetlands, mangroves, dunes, and waters. In accordance with the principles of ICZM, these buffers will be most effective, however, if combined with careful and well-planned development outside of the zones and with strict limits on upstream pollution that might affect coastal areas.

CITMA has made implementation of DL 212 a high priority and steps taken so far are promising. For example, just two years after DL 212 was approved, DMA spearheaded a far-reaching investigation of the most important environmental problems in coastal areas, the sources of those problems, and the management structures in place to address them.[55] Because of the interconnection among coastal ecosystems, environmental problems are closely

linked, making it difficult to identify and address individual threats. Nonetheless DMA grouped problems into five main categories: (1) coastal degradation (e.g., from erosion, withdrawal of the coastal line, excessive compaction, salinization); (2) deterioration of sanitation and poor environmental conditions (e.g., from disposal of liquid wastes and conversion of natural ponds into oxidation ponds); (3) pollution of the coastal areas (e.g., from agricultural activities, oil, mining activities, domestic waste, and sewage waters); (4) damage to the natural vegetation (e.g., from construction of sea roads, deforestation, desertification); and (5) loss of coastal and marine biodiversity (e.g., from habitat destruction, poor fishing practices, mangrove destruction, minerals extraction, and destruction of species). DMA also worked to identify management structures that could address each of these problems.[56]

With this information in hand, DMA has worked closely with the territorial delegations of CITMA to compile and analyze environmental data and to prioritize management objectives. Priorities include: (1) integration and coordination of economic sectors and corresponding institutions to guarantee the implementation of environmental management initiatives; (2) identification of priority areas for management and diagnoses of key problems; (3) preparation and implementation of programs, plans, and strategies for integrated management, and identification of possible funding sources for implementation; (4) more widespread use of management instruments such as territorial and sectoral environmental strategies and action plans, biological diversity strategy, environmental licensing process, land use planning, environmental impact assessment process, strategy for environmental education and other educational materials; (5) development of mechanisms to ensure financial sustainability of the conservation of biodiversity resources in coastal zones; and (6) use of available scientific data and information relating to coastal areas, and the identification of additional information and data needs. Together, they also identified a number of economic, social, and legal barriers that, if not addressed, would hamper efforts to implement the mandates of DL 212.[57] Agency officials intended that this study would provide information and guidance both to officials in Havana and managers in the provinces on how to proceed with developing a truly integrated approach to environmental management in coastal areas. More important, however, was the process of moving away from a top-down, centralized approach to policymaking and management through the engagement of local experts and resource managers in the development of management strategies. This model recognizes the need to secure the buy-in of local communities in environmental protection.

At the national level too, DMA has worked to institutionalize a more integrated approach to planning and policymaking as contemplated in Law 81. In 2003, the agency organized the National Group of Coastal Zones (Grupo Nacional de Zonas Costeras), a collection of more than twenty agencies, in-

stitutes, and projects from eleven different ministries. Its functions include overseeing and evaluating the implementation of ICZM principles on the ground, facilitating and guaranteeing the flow of information among ministries and agencies, discussing and evaluating proposals for new construction in sensitive coastal areas, providing a forum for negotiation among competing interests, and making policy and management recommendations to the highest levels of government. At the present time, the National Group of Coastal Zones focuses its efforts through the work of several sub-working groups: (1) group for integrated management of bays; (2) land use planning and strategic evaluation; (3) wetlands management; (4) identification of fragile keys where construction is prohibited;[58] (5) characterization of water bodies receiving point source discharges of pollutants; and (6) education and training on integrated coastal zone management. The group has produced important results such as: (1) in-depth research on the environmental condition of important bays and the development of corresponding integrated management plans; (2) development and implementation of the action plan of the Institute of Physical Planning to implement mandates of the coastal zone management Decree Law 212; (3) development of maps of the Cuban keys based on agreed-upon classifications; and (4) definition of the categories for water bodies that receive wastewater discharges. Though advisory in nature, the Group has the potential to serve a vital role in integrating substantive and procedural environmental requirements into the policies and plans of the ministries of Tourism, Economy and Planning, Foreign Investment, and others. In their three years of work so far, the Group has identified remaining gaps in the legal requirements that apply to coastal areas, evaluated institutional models for the integrated management of coastal ecosystems, and developed a characterization of the Cuban coasts and the main environmental problems facing them.

Formalizing a National System of Protected Areas

Cuba began formally protecting special natural areas in the 1930s when it established its first national park, Parque Nacional Pico Cristal in the Sierra Maestra mountains. Since then, and in particular since 1959, Cuba has developed a broad network of terrestrial, marine, and marine-coastal protected areas throughout the country. Until the 1990s, however, no single law governed the designation, administration, or management of protected areas, and few national parks or other protected areas even had written management plans. In some cases, designated protected areas had no legal protection at all. Law 81 established the legal framework for a formal National System of Protected Areas (SNAP) and replaced the Ministry of Agriculture with CITMA as the lead ministry for its administration and management. In 1999, CITMA took concrete initial steps toward implementing a formal protected area network in when it adopted Decree Law 201, *National System of Protected Areas*. This

decree law provides that protected areas are designated areas which are ecologically, socially, historically, and/or culturally important and which are managed for the protection and maintenance of their biological diversity and related natural, historical, and cultural values. DL 201 establishes the legal regime for the SNAP that includes eight different categories of protected areas, requirements for planning, administration and management of such areas, and processes and procedures for proposing and approving new protected areas. DL 201 builds upon the authority granted to CITMA in Law 81, in particular by creating a regime for consultation and approval of new protected areas. CITMA is responsible for identifying areas that may be considered for protection, and leads a complex process in which the review and comment of other ministries is solicited for each proposed new protected area. CITMA also decides which proposals to submit to the Executive Committee of the Council Ministers for final approval. Finally DL 201, pursuant to Law 81, identified CITMA as the principal agency with jurisdiction over the SNAP, and it enabled the ministry to serve as possible administrator for areas of great significance, in which other entities and organizations have interests.[59] The degree to which CITMA reconciles its role as the principal agency for SNAP with the administration of particular protected areas, is an issue that continues to be a subject of national environmental policy.[60]

CITMA is making progress in implementing DL 201. In 2001 the Executive Committee of the Council of Ministers designated an initial group of thirty-two new protected areas, marking the beginning of a new stage in the history of the SNAP.[61] In 2003, CITMA (with assistance from the United Nations) developed its first five-year plan for the SNAP.[62] As of December 2005, the SNAP was comprised of thirty-five protected areas which have been approved and are being managed. Another twenty-two proposed areas are moving forward in the approval process (i.e., being circulated for review and discussion by the Council of Ministers), and a large number of those already have management plans in place or are in the process of establishing a management structure. In addition to these, there exists another group of areas currently being administered jointly by the National Enterprise for the Protection of Flora and Fauna and CITMA; these will be included in the next round of legal approvals. Protected areas may be terrestrial, marine, or a combination of both. At the moment, there are a total of eighteen legally declared Marine Protected Areas (MPAs) and CITMA, in conjunction with the Ministry of Fisheries, is developing an island-wide network of science-based MPAs that is designed to protect coral reefs and other important marine ecosystems. The Cuban government, as a signatory to multilateral international agreements, has also provided protection to a variety of sites under the categories of Biosphere Reserves, World Heritage Sites, and Ramsar Sites.[63]

Environmental Review of Proposed Projects

Perhaps the most important new legal instrument in Cuba is the Environment Impact Assessment (EIA), which precedes the granting or denial of an environmental license. The EIA and the environmental license are authorized pursuant to Law 81 and implemented through Resolution 77/99, "Rules and Regulations for the Environmental Impact Evaluation Process."[64] Like its counterparts in the United States and other countries, the fundamental purpose of the EIA in Cuba is to ensure that decision makers take a *hard look* at the potential environmental impacts of a proposed project before allowing the project to proceed. Unlike the environmental assessment process in the United States — which does not mandate that final permits include the most environmentally benign alternatives — the EIA in Cuba is substantive and requires that the environmental licensee take steps to avoid, minimize, and mitigate adverse environmental impacts.[65] The need for an EIA is triggered by an application for environmental license to the Center for Inspection and Environmental Control (CICA) within CITMA. EIAs are mandatory for most large construction projects and a range of activities including sewage storage, management and treatment facilities, mining, roads, causeways and other transportation infrastructure, tourism facilities (in particular those sited in coastal ecosystems), and any other activity occurring in a fragile ecosystem that significantly alters the ecosystem, or affects public access to natural resources or the environment in general.[66] For other types of projects, CICA makes the determination of whether an EIA is required, and its discretion is guided by consideration of a number of factors including human health risks, adverse impacts to natural resources and ecosystem integrity, impacts on scenic and tourism values, proximity to protected areas, and public opinion of the proposal. Based on the information in the completed EIA, CICA may approve the license as proposed, deny it outright, or approve it subject to conditions aimed at avoiding or mitigating adverse impacts. CICA may also deny a license based upon location and direct that more environmentally sound alternative sites be considered.

Preparation of an EIA is time-consuming and expensive, if done properly. Earlier articles have described some of the challenges the Cuban government faces in ensuring that EIAs are completed in every case in which they are mandated, and that they are the product of thorough and objective analyses.[67] Among the most important of these are: (1) assuring that the consultants who prepare the EIAs are objective and qualified; (2) making the assessments available for inspection by the public (they are currently confidential); and (3) providing for meaningful public comment on the documents.[68] The ultimate challenge for Cuban agencies is to ensure that the results of the EIA truly inform and guide the final decision on whether a project should be approved

and, if so, under what guidelines, conditions, and standards. This implies too that final decisions on material aspects of a project will not be made until the EIA is completed.

Early indications are that EIAs are having some influence over final license decisions. For example during 2003, there were 706 applications for environmental licenses and of those, 571 were granted and 2 were denied.[69] Not reflected in these statistics is the fact that in many cases CITMA imposes conditions on new projects as part of the final environmental license in order to bring such projects into compliance with applicable environmental standards. Also, in some cases CITMA receives applications for new projects that clearly will not meet environmental requirements, even if modified. These applications are rejected out of hand and such denials are not even recorded in the official statistics. The fact that few license applications were rejected is due in part to the fact that critical decisions regarding where new projects will be located are made before the environmental review of proposed projects begins. As part of land use planning at the territorial level, the Institute of Physical Planning (within the Ministry of Economy and Planning) determines the physical location of proposed new facilities and projects through a process called "microlocalization."[70] Although, by law, CITMA must be consulted by planning officials as part of the land use planning process, such a review by environmental officials is not as thorough as that conducted in an EIA. Thus, in practice the microlocalization process has already determined the location of the project even before the applicant applies for an environmental license. This serves to limit the discretion of CITMA officials to deny licenses to such projects.

The Participation of the Public in Environmental Decisions

The success of Cuba's efforts to implement and enforce its new environmental laws will depend, in large measure, on its success in allowing the general public to participate in environmental policymaking and in decision making over proposed construction projects and other activities such as new coastal resorts, roads, mining, and wastewater treatment facilities. Policymaking in Cuba is still centralized and top-down.[71] Lawmaking is the province of the National Assembly of Peoples Power and the Council of State and administrative authority is vested in the Council of Ministers.[72] Some degree of public involvement in governmental decisions and policymaking is recognized by the Cuban Constitution, which expressly sanctions a number of social organizations and contemplates that each will play a role in formulation of policy.[73] The Local Popular Power Bodies (at the provincial and municipal level) represent a system in which several environmental issues are discussed and conducted.[74] Under this approach, decentralized neighborhood units must evaluate issues regarding water supplies, solid wastes, and sanitation, and present a report on their findings to local citizens.

The above examples aside, much can be done to enhance public input in policymaking. As noted above, Law 81 includes an explicit mandate for a direct role for the public in decision making.[75] Resolution 77/99 is the principal regulation for implementing Law 81's public participation mandates, though its provisions are fairly vague. It contemplates that communities will be notified of proposed construction projects and other activities that may result in adverse environmental impacts and that the public will be consulted during the environmental assessment phase. Article 9 of the resolution states that CICA will "adopt the measures necessary so [that] the interests and concerns of the community and the citizens in general, in the area of the construction work or activity, are taken into consideration during the whole Environmental Impact Evaluation Process." Article 25 provides that environmental impact assessments must include information provided pursuant to consultations with local authorities and with the public. Beyond that, the specifics of the public consultation process are contained in CICA guidelines and in the methodology for conducting environmental assessments and for issuing environmental licenses, developed by staff in 2001.[76] While Law 81 provides a mandate for all three of the Rio Earth Summit access principles — access to information, participation, and justice — the 2001 CICA guidelines only address the first two.[77] The guidelines set forth an initial methodology for providing information to the public on proposed construction projects and activities and for conducting public consultations on the proposal. The general and specific objectives underlying public involvement in the environmental assessment process are consistent with the access principles.[78] The guidelines identify four distinct stages that should be followed in any public consultation process: (1) preparation for the public consultation; (2) information stage; (3) consultation stage; and (4) report of the results and an independent review. The guidelines also specify that the rules for public consultation are intended to be flexible and that each consultation should be designed to meet the particular needs of the community in which the project or activity is being proposed.[79]

CICA's objectives, guidelines, and methodologies call for fundamental changes in the manner in which decision making on environmental issues in Cuba has been conducted. For example, historically the general public has not been provided with advance notice of pending projects with environmental consequences, nor have they been provided with opportunities to ask questions or express concerns about proposed activities. Nor have nongovernmental organizations been empowered to participate in the review of projects. This new approach represents a departure from past practice, yet is actually consistent with constitutional provisions and with the theoretical underpinnings of the country's socialist system of government. Empowering the public (and enhancing the capacity of NGOs) should make decisions more transparent and thus hopefully lead to enhanced government accountability.[80] To this end, environ-

mental officials have not yet made CICA's public participation guidelines fully operational, but have tested them in a few pilot projects across the island. For example, CICA officials have conducted public hearings on a proposed wastewater stabilization pond in Cabarien, in Villa Clara province; a proposal to reopen a marble mine in Pinal del Rio; and a proposal to install electric lines to provide electricity to a nickel mining operation and other facilities in Moa, in Holguín province. All of the hearings were well attended by people in the affected communities and, in the case of the project in Moa, almost 20 percent of those attending expressed opposition to the project. In all three cases, CICA officials imposed conditions in the environmental licenses in order to address concerns raised by stakeholders attending the public hearings.[81]

Enforcement

Enforcement is critical to implementing any effective system of environmental regulation, and can be achieved through a number of mechanisms: emissions monitoring, inspections, reporting requirements, civil and criminal penalties, and citizen lawsuits. Law 81 establishes the basis for an enforcement system that includes all of the above, including administrative and civil penalties and opportunities for private citizens to seek relief from environmental violations in administrative and judicial courts.[82] In 1999, CITMA promulgated Decree Law 200/99 to establish an environmental protection regulatory regime and to provide for a number of modifications to the Cuban juridical system. This decree law sets forth a schedule of penalties for violations of environmental laws and regulations, including those pertaining to environmental impact assessments, state environmental inspections, atmospheric discharges, the handling and disposal of hazardous wastes, the use and disposal of chemical products, noise pollution, and other matters. DL 200/99 complements other dispositions that provide for administrative sanctions for violations of laws relating to land use, water quality, and forest management.[83] DL 200 authorizes CITMA to take a number of possible actions against those who violate environmental rules, including the imposition of fines, seizure of property, closing of facilities, and the repeal and suspension of licenses.[84] It is important to note, however, that CITMA's enforcement authority does not yet extend effectively to the full range of activities that pollute or otherwise harm the environment and are covered by DL 200, because not all such activities are subject yet to specific or sufficient emission limits or environmental standards.[85]

As is the case with many sugar factories, power plants, and other aging industrial facilities, CITMA officials realized that strictly applying new standards to industrial plants in existence prior to Law 81 might result in suspending operations at those facilities; they feared that such drastic actions would paralyze important industries critical to Cuba's economy and social welfare.

But rather than exempt all existing facilities from new environmental rules, CITMA has adopted a policy of applying environmental standards to existing facilities on a case-by-case basis, grading upon the practicability of retrofitting old facilities with newer and cleaner production technologies and systems. In those cases where there is a history of environmental infractions combined with a notorious lack of diligence in addressing those infractions, however, the environmental officials generally impose rigorous sanctions, including the closure of installations in some cases.[86] At this point, with a relatively sufficient, if not complete set of regulations in place, the main challenge CITMA faces is a lack of personnel, transportation resources, and monitoring systems needed to make an enforcement program fully functional.

Economic Tools

One of the innovations in Law 81 is the authority to use economic instruments in environmental management, including the use of tax policy, tariffs, dedicated conservation funds, "green certification" of products and processes, and differentiated prices for the development of activities that impact the environment.[87] Pursuant to this authority, important provisions have been adopted, including Resolution 13/99 of the Ministry of Finances and Prices that regulates the tariff allowances for the import of environmental technologies and the import of raw materials and necessary parts for the production of equipment or instruments designed to avoid, reduce, or control contamination and environmental degradation. Resolution 69/2000 of CITMA contains the procedures for the certification of the tariff allowances and the directives of the National Bank to obtain soft (green) credits as a way for financing solutions of certain environmental problems. Resolution 36/99 of the Ministry of Finances and Prices introduced a rate, on an environmental basis, for the exploitation of the Havana Bay. Special mention should be made for the National Fund for the Environment ("Fund"), authorized pursuant to Article 35 of Law 81, for the purpose of fully or partially financing projects or activities aimed at environmental protection. The Fund came into being pursuant to Joint Resolution 1-99 of the ministries of Finances and Prices (MFP) and Economy and Planning (MEP), which established the sources and uses of the Fund and created a multisectoral board comprised of officials from those ministries along with CITMA and the Ministry of Foreign Investment.[88] The Fund is comprised primarily of revenues generated from environmental license fees along with monies that may potentially be received from international entities such as the United Nations Environmental Programme or from nongovernmental organizations. So far three convocations of the Fund have been launched (2001, 2002, and 2003) and more than 200 projects have been fully or partially financed. Although too new for an in-depth evaluation, and conditioned and limited by the complexities of the Cuban economy, economic instruments are surviving

their "trial by fire" test, and are increasingly considered as feasible ways of contributing to the country's environmental protection goals.[89]

Conclusion

The world of environmental protection is littered with so-called *paper tigers* — written laws, regulations, proclamations, and standards that promise environmental quality and sustainable development but fail to deliver because of a lack of money, monitoring, manpower, or political will. "*Del dicho al hecho hay un gran trecho*."[90]

As Professor Houck has aptly noted, when the economy is in trouble, the environment almost always plays second fiddle. Environmental protection arguably is often subordinated to economic agendas even in developed countries with reasonably strong economies. For example, courtrooms across the United States today are packed with citizens suing federal, state, and local governments for inadequately implementing or enforcing environmental requirements already on the books. In light of this, many remain skeptical that the Cuban government can or will make implementation of its new environmental reforms a priority. Their view is that the government is likely to do little or nothing to implement new environmental laws, and consequently tourism, mining, and other resource-intensive sectors will be allowed to grow without sufficient attention to pollution control, proper land use planning, or the sustainable use of natural resources. Others, including the authors of this article, share a more optimistic view.

Given the country's ongoing need to grow its economy, the pressure on Cuba's environment and natural resources is by many accounts unprecedented. Yet, there is mounting evidence that Cuba's commitment to environmental protection is sincere and lasting.[91] More study and analysis of Cuba's successes and failures in implementing its new environmental laws is sorely needed and would be of great value to current and future policymakers, environmental managers, and investors in the country. This article does not attempt such a study, but instead is intended to shine the light on a new body of environmental law that should not be overlooked or dismissed in future discussions and debates about Cuba's environment.

Internally, the Cuban government would be wise to strengthen, accelerate, and publicize its efforts to implement Law 81 and the myriad other laws, decree laws, and resolutions mentioned in this article. A strong CITMA can lead the way in this endeavor, but will succeed only with commitments from all sectors of government including, but not limited to, the ministries of Foreign Investment, Economy and Planning, and Tourism. Foreign governments, the United Nations, development banks, nongovernmental organizations, and pri-

vate businesses as well should take note of the scope and rigor of Cuba's environmental laws and assist the country in this effort.

At its core, the new body of environmental law in Cuba signals that real, long-term economic growth can only occur with better sanitation in its cities and rural communities, scenic and ecologically rich coastal and marine areas, well-protected national parks and other natural areas, and well-managed natural resources. To this end, Cuban environmental law could serve as a model to other Caribbean and Latin American countries and could usher in a new era of sustainable development in the region.

NOTES

1. See generally, Rodolfo Claro et al., *Ecology of Marine Fishes of Cuba*; see also Eugene Linden, "The Nature of Cuba."

2. Linden, "The Nature of Cuba," 96.

3. This era resulted in extensive water pollution, massive soil erosion, and loss of wetlands and other natural areas. See Carmen Gonzalez, "Seasons of Resistance: Sustainable Agriculture and Food Security in Cuba," 744; Sergio Díaz-Briquets and Jorge Pérez-López, *Conquering Nature: The Environmental Legacy of Socialism in Cuba*, 1–23.

4. *National Environmental Strategy*, 2d issue. May 2000. CITMA, Republic of Cuba. 48 pp.

5. See, e.g., Daniel J. Whittle et al., "International Tourism and Protection of Cuba's Coastal and Marine Environments," 541–43.

6. See, e.g., Oliver A. Houck, "Thinking about Tomorrow: Cuba's 'Alternative Model' for Sustainable Development;" Whittle, "International Tourism and Protection of Cuba's Coastal and Marine Environments," 534–43; Díaz-Briquets and Pérez-López, *Conquering Nature*, 28–32; Argelio Maldonado, "Cuba's Environment: Today and Tomorrow — An Action Plan," 63–73.

7. Díaz-Briquets and Pérez-López, *Conquering Nature*, 1–23; Sergio Díaz-Briquets and Jorge Pérez-López, "Socialism and Environmental Disruption: Implications for Cuba," 154–72; Eudel Eduardo Cepero, "Environmental Concerns for a Cuba Transition," 1–3. See generally, Colin Powell, *Commission for Assistance to a Free Cuba*, 359–423.

8. Powell, *Commission for Assistance to a Free Cuba*, 361–64; Cepero, "Environmental Concerns for a Cuba Transition," 1–3; Sergio Díaz-Briquets and Jorge Pérez-López, "The Environment and the Cuban Transition," 488–98.

9. Powell, *Commission for Assistance to a Free Cuba*, 365–68; Cepero, "Environmental Concerns for a Cuba Transition," 13–14; Díaz-Briquets and Pérez-López, *Conquering Nature*, 46–78.

10. Richard Levins, "How Cuba is Going Ecological," 14.

11. See Díaz-Briquets and Pérez-López, "Socialism and Environmental Disruption;" see also Houck, "Thinking about Tomorrow," 531, citing Rett R. Ludwigowski, "Constitutional Culture of the New East-Central European Democracies."

12. Lifting the U.S. embargo on Cuba will certainly test Cuba's environmental policies and its resolve to grow the economy in a deliberate and sustainable manner. See generally, Whittle, "International Tourism and Protection of Cuba's Coastal and Marine Environments," 547–52.

13. Houck, "Thinking about Tomorrow," 521.

14. See http://www.lanic.utexas.edu/la/cb/cuba/castro/1992/19920616.

15. The scope of the economic crisis in Cuba following the collapse of the Soviet Union is

well documented. See, e.g., Jorge I. Dominguez, "Cuba's Economic Transition: Successes, Deficiencies, and Challenges," 17–47; and "La Economía Cubana: Reformas Estructurales y Desempeño en los noventa."

16. Díaz-Briquets and Pérez-López, *Conquering Nature*, 261–66.

17. For definitions of sustainable development and sustainable tourism, see Agenda 21, UN Doc. A/Conf. 15/26 (1992), at http://www.world-tourism.org/sustainable/doc/a21-def.pdf.

18. "The State protects the environment and natural resources. It recognizes the close links they have with sustainable economic and social development to make human life more rational and to ensure the survival, well-being and security of present and future generations. . . . It is the duty of citizens to contribute to the protection of the waters, atmosphere, the conservation of the soil, flora, fauna and nature's entire rich potential" (Article 27, Constitution of the Republic of Cuba, Ediciones ONBC). See also Raúl Brañes Ballesteros, "Informe Sobre el Derecho Ambiental Latinoamericano. Su Aplicación después de diez años de la Conferencia de la Naciones Unidas Sobre el Medio Ambiente y el Desarrollo" (http://www.rolac.unep.mx). The constitutional provision imposing an affirmative duty of citizens may be unique to the region. It is not clear, however, the extent to which Article 27 confers *enforceable* individual or collective rights to a clean and healthy environment. Nevertheless, Law 81 clearly established the citizen's right to act in the administrative and judicial way. See Thomas T. Ankersen, "Shared Knowledge, Shared Jurisprudence: Learning to Speak Environmental Law Creole (Criollo)," 826.

19. Agenda 21, UN Doc. A/Conf. 15/26 (1992). Following Agenda 21, a National Program on Environment and Development was developed in Cuba in 1993, but the significant economic, social, and legal changes that subsequently occurred in Cuba quickly rendered the Program obsolete.

20. The development of some of these laws and policies are discussed in Oliver A. Houck, "Environmental Law in Cuba."

21. In line with its coordinating mandate, the few regulations that COMARNA developed involved the creation of commissions or working groups with specific responsibilities over certain activities and issues.

22. Such limitations are typical of that kind of coordinative structure, and in that respect Cuba followed the example set in most Latin American countries where jurisdiction over environmental protection moved from councils or commissions to executive bodies. At the present time only two countries in Latin America, Peru and Chile, retain environmental commissions as the principal environmental bodies.

23. Orlando Rey Santos, "Reflections on the Legislative Process of the New Environmental Law," 13. See generally, Debra Evenson, *Law and Society in Contemporary Cuba*.

24. Agreement No. 2823 of the Executive Committee of the Council of Ministers of 28 November 1994, cited in *National Environmental Strategy*, 11. See Rey Santos, "Reflections on the Legislative Process of the New Environmental Law," 13; Oliver A. Houck, "Cuba's New Law of the Environment: An Introduction," 2; and Houck, "Environmental Law in Cuba," 1–81.

25. Nevertheless, some resources and sectors remained outside CITMA's direct jurisdiction, such as forests (within the Ministry of Agriculture), and water resources (within the National Institute for Hydraulic Resources). For those reasons, CITMA must be considered as an intermediate step to a broader, more complete environmental authority.

26. *National Environmental Strategy*, 7.

27. *National Environmental Strategy*, 3. The relative weight accorded to environmental issues in Cuba in the 1960s and 1970s reflected the thinking common in developed and developing countries regarding pollution. Richard Levins asserts that the Cuban government's early policies to develop the industrial agriculture were in line with the "Green Revolution" and accordingly aimed at stabilizing food supplies and raising the quality of life for rural citizens, not protecting against the environmental and public health risks of pesticides. Richard Levins, "How Cuba is Going Ecological," 14.

28. *National Environmental Strategy*, 3.

29. Rey Santos, "Reflections on the Legislative Process of the New Environmental Law," 11.

30. Being a framework law, Law 33 required the development of complementary laws and policies, some of which were not put in place until ten years after the law was enacted. But in some areas, such as atmosphere, tourist resources, and others conceived of by Law 33, complementary dispositions were never adopted.

31. *National Environmental Strategy*, 13.

32. *National Environmental Strategy*, 14.

33. See generally, Houck, "Cuba's New Law of the Environment;" and Rey Santos, "Reflections on the Legislative Process of the New Environmental Law."

34. Rey Santos, "Reflections on the Legislative Process of the New Environmental Law;" and Houck, "Environmental Law in Cuba," 18: "The tug-of-war among resource agencies and the constituencies over environmental policies and the substantive provisions that would carry them out, mirrored those seen in Washington, DC, Brussels, and other capitals."

35. It is important to understand the hierarchy of laws of the Cuban system. The first is a *law* (*ley*) which requires enactment by the National Assembly of the Popular Power, followed by a *decree-law* (*decreto ley*) that is enacted by the State Council, and that acquires the same legal force of a law when ratified by the National Assembly. The next level is the *decree* (*decreto*), mainly of regulatory character, which is adopted by the Council of Ministers, which also adopts *agreements* (*acuerdos*). At the base of that legal hierarchy are *resolutions* (*resoluciones*) and *instructions* (*instrucciones*) that are promulgated by the Organisms of the Central Administration of the State, and apply to activities only within their jurisdiction.

36. Law 81, Article 9 (c)(d).

37. Law 81, Article 11.

38. See Law 85/98, Law on Forests.

39. CITMA Resolution 168/95.

40. CITMA Resolution 130/95.

41. For example, Article 1.2 of Law 77 requires that foreign investments be consistent with "the norms related to the protection of the environment and the rational use of natural resources." Article 54 of the same requires that "environmental conservation and the rational use of natural resources shall be carefully undertaken." Finally, Article 55 requires that the Ministry of Foreign Investment solicit CITMA's review of the "investment's suitability from an environmental point of view."

42. In November 1995, with the support of the United Nations Environmental Programme and the participation of lawyers from Mexico, Peru, Venezuela, Argentina, and Chile, CITMA convened a National Workshop on the Legal Implementation of the National Program of Environment and Development, which was the basis for many of the ideas and concepts later included in Law 81 and other legal dispositions adopted pursuant to Law 81. This legal program was updated in 1997, after the approval of the law, and most recently in 2003. At that time, the decision was to focus on the implementation of existing rules, and only issue new regulations when strictly necessary and when the capacity for implementing new regulations was completely assured.

43. See generally Houck, "Environmental Law in Cuba;" and Whittle, "International Tourism and Protection of Cuba's Coastal and Marine Environments." CITMA's success in moving so quickly was made possible in large part by the vision and efforts of its first minister, Rosa Elena Simeon, a scientist who since 1985 had been President of the National Academy of Sciences. Simeon's keen political skills and sensibilities, together with the strong backing she received from the highest levels of government, made her especially effective in securing broad support for a wide range of environmental reforms.

44. CITMA has often modeled laws on those from other Latin American countries, the United States, and Spain, and has solicited input from teams of lawyers and other experts from Mexico, Costa Rica, Colombia, Peru, Brazil, Venezuela, Chile, Argentina, and the United States.

45. Rey Santos, "Reflections on the Legislative Process of the New Environmental Law," 18.

46. Rey Santos, "Reflections on the Legislative Process of the New Environmental Law."

47. Because of length limitations, this article does not address the full suite of environmental laws enacted since the Special Period.

48. The delay in the revision of these laws is closely tied to the fact that CITMA does not have jurisdiction over those issue areas. Thus CITMA is not in a position to initiate, by itself, proposed amendments to such laws. A first draft of a new Law of Water was circulated early in 2005 by the National Institute of Hydraulic Resources, but CITMA and other governmental bodies were highly critical of the draft. Consequently, a significant amount of work remains to be done to update this and other laws lying outside of CITMA's direct jurisdiction.

49. There has been some isolated progress in several parts of the country in using the courts to hear and address environmental claims. In those cases traditional civil procedure has been followed. Both the Civil Code and the law that provides for civil procedure were adopted before Law 81, and have not been significantly amended since then. In 1999, CITMA developed proposals to amend those laws in a manner consistent with Law 81, but no action has yet been taken.

50. Houck, "Thinking about Tomorrow," 521–23.

51. Until then, activity in coastal areas had been governed by a variety of laws, including the Law of the Ports, enacted in 1880. The Law of the Ports was repealed by Decree-Law 230, in August 2002.

52. See generally Whittle, "International Tourism and Protection of Cuba's Coastal and Marine Environments," 555–57; and José Mena Alvarez, "El Sector del Turismo en Cuba: Diagnóstico y Proyecciones," 5–8. There is also tourism development, in Santa Maria, Frances, Las Brujas, and other keys.

53. There were two main reasons that this approach was taken. First, early drafts of the law were modeled after coastal laws in countries with significantly degraded coastal ecosystems. The primary objective of these laws was to prohibit new construction in order to gradually reverse the deteriorating physical condition of coastal areas. Second, protection of biodiversity was not yet on the radar of most environmental officials and, as such, was not fully considered in the early drafts of the coastal law.

54. For a definition of integrated coastal zone management see, e.g., http://www.defra.gov.uk/environment/water/marine/uk/iczm/stocktake/section1.pdf.

55. "Las Costas Cubanas, Información Para Una Gestión Integrada." Preliminary report. DMA, November 2002.

56. "Las Costas Cubanas, Información Para Una Gestión Integrada." Preliminary report. DMA, November 2002.

57. Among the barriers identified were: (1) lack of financial resources; (2) revenues generated from the use of the coastal zone are not directly dedicated to environmental management; (3) environmental monitoring is limited because of the lack of staff and resources; (4) existing mechanisms for community participation are not frequently used in the process of decision making in the coastal zone; (5) local authorities and decision makers often do not respect culture and traditions of the coastal zone communities; (6) lack of alternative sources of employment result in pressure to exploit the natural resources of the coastal zones; (7) lack of adequate integration of the monitoring and enforcement systems for natural resources; and (8) inefficient flow of information as a feedback mechanism for decision making.

58. Article 26.1 of Decree Law 212 prohibits construction on keys or peninsulas so narrow that the required setbacks could not be fulfilled, in areas of extreme fragility, due to their stage of geomorphologic development; and on keys that are completely covered by mangrove vegetation or exhibit an incipient development of their beaches, unless necessary for national defense and security interests. Article 26.2 directs CITMA to identify keys with the abovementioned characteristics.

59. Article 58 of DL 201 established CITMA as the primary administrator of the more relevant areas.

60. During the negotiations over DL 201 there was extensive discussion and debate among the Ministry of Agriculture (MinAg) and CITMA over which agencies would be charged with administrating protected areas. Since the 1960s MinAg, through its Flora and Fauna Enterprise, had been the main administrator of protected areas, in part because until 1994 there had not been a cabinet-level authority dedicated to environmental protection and natural resources management. Thus, historically, MinAg had by default served as the principal entity in charge of the environment. Now, pursuant to the new environmental reforms, environmental officials asserted that environmental and natural resources management duties should be transferred the new environmental agencies within CITMA.

61. Agreement 4262.

62. *The National System of Protected Areas Plan, 2003–2008.* Havana: CNAP, CITMA, GEF, PNUD, 2002.

63. There are six designated international biosphere reserves in Cuba: Sierra del Rosario, Guanahacabibes, Cuchillas del Toa, Baconao, Buenavista, and Ciénaga de Zapata. Six wetlands of extraordinary value have been identified as having international importance pursuant to the Ramsar Convention: Ciénaga de Zapata, Ciénaga de Lanier and Sur de la Isla de la Juventud, Humedal Río Máximo-Cagüey, Gran Humedal del Norte de Ciego de Ávila, Buenavista, and Humedal Delta del Cauto. World Heritage Sites are Parque Nacional Desembarco del Granma and Parque Nacional Alejandro de Humboldt. Many other areas are under study for inclusion in various international categories.

64. A first resolution in the matter of environmental assessments (CITMA Resolution 168/95) had been adopted in 1995, before the Law 81 of the Environment was finalized.

65. Houck, "Environmental Law in Cuba," 27–38.

66. Article 6(z) of Resolution 77/99.

67. See Kenyon Lindeman et al., "Sustainable Coastal Tourism in Cuba: Roles of Environmental Assessments, Certification Programs, and Protection Fees;" also Houck, "Environmental Law in Cuba."

68. Lindeman, "Sustainable Coastal Tourism in Cuba."

69. Information provided by the Regulatory Office. The remaining applications were still pending at the end of the year.

70. For a discussion of the land use planning process in Cuba, see Whittle, "International Tourism and Protection of Cuba's Coastal and Marine Environments," 571–75.

71. Evenson, *Law and Society in Contemporary Cuba*, 17. The 1992 constitutional amendments also provided for direct elections for both the National and Provincial Assemblies.

72. Evenson, *Law and Society in Contemporary Cuba*, 17.

73. Evenson, *Law and Society in Contemporary Cuba*, 18. These include the Central Organization of Cuban Workers, Committees for the Defense of the Revolution, the Federation of Cuban Women, the National Association of Small Farmers, the Federation of University Students, and the Federation of Students of Intermediate Education.

74. See Law 81, Article 15.

75. Law 81, Article 4(e) reads: "every person must have adequate access, in conformance with the established legal requirements, to all available information in the possession of state agencies and bodies regarding the environment." Article 4(k) provides: "public knowledge of environmental actions and decisions and consultation with the public will be assured in the best manner possible, but in every case must occur." Also see Law 81, Articles (4)(i), (l), and (m).

76. "Guías Para La Realización de las Solicitudes de Licencia Ambiental y Los Estudios de Impacto Ambiental." Centro de Inspección y Control Ambiental. Ministerio de Ciencia, Tecnología y Medio Ambiente, 2001.

77. Like many of the countries surveyed by the Access Initiative, Cuba has not yet made significant progress toward providing citizens access to the courts to challenge flawed permits or procedural violations. See Elena Petkova et al., *Closing the Gap: Information, Participation, and Justice in Decision-Making for the Environment*. It is important to note that the foundation for putting this third principle in place is established in Law 81. The lack of judicial activity over environmental matters is attributable in part to existing vacuums in civil legislation governing the court system; to a lack of judicial initiative to make environmental issues a priority; and lack of innovation or motivation on the part of lawyers. It can also be attributed to the technical complexity of the eventual processes.

78. Specific Objectives:

1. To inform all potentially interested stakeholders about the characteristics and possible impacts of construction projects and other activities before soliciting stakeholders' opinions.
2. To consult the opinion of all stakeholders interested or involved in the project.
3. To register and document all the opinions and suggestions expressed by stakeholders during the consultation process.
4. To evaluate the results of the public consultation before making a decision on whether to grant the environmental license.
5. To integrate the results of the Public Consultation in each of the project alternatives, modifying any aspects that require it.

79. The first stage entails soliciting help from local government and party officials and institutions to identify and inform relevant stakeholders (e.g., general public, neighbors, project proponents, and investors) about the proposal. Once the agency identifies the key stakeholders, at the second stage it determines the best ways in which to provide information to them in advance of a public meeting or hearing. The information provided in this second stage must apprise stakeholders of their right to participate in the review of the project, include an executive summary of the project, and provide a detailed list of the advantages, disadvantages, and potential impacts associated with the project. The third stage is the public consultation itself. The guidelines conceive that consultations involve more than the mere opportunity for interested citizens to submit written comments to the agency. The guidelines suggest that a public hearing or meeting is the most effective mechanism for soliciting public review and feedback, but leave it up to agency officials to determine how best to conduct such a meeting. Consultations may be conducted with the cooperation of neighborhood assemblies, labor unions, student groups, or other local organizations. Hearings should be coordinated with the president of the Popular Council in the area in order to maximize publicity of and attendance at the hearing. The guidelines stipulate that the goal of these consultations is to enhance the public's knowledge of the project, to solicit ideas for improving the project, and to gauge social acceptance of it. The fourth and final stage is a report on the results of the public consultation. This is similar in purpose and format to a typical report prepared by hearing officers that conduct public hearings for environmental agencies in the United States. The report should describe the manner in which information was provided, who attended the meetings, what comments and suggestions were expressed, and what steps will be taken to address public concerns over the project. According to its guidelines, CICA should have already designated an independent reviewer who attended and observed the public meeting(s). The independent reviewer's task is to analyze the draft report to ensure that the agency accurately captures and responds to public comment. See Candice Kanepa Gonzalez, "Public Participation in the Environmental Decision Making Process in Cuba," for the 28th International Postgraduate Course on Environmental Management for Developing and Emerging Countries, at the Technical University of Dresden in Dresden, Germany, July 2005 (on file with the authors). Kanepa Gonzalez served as an Environ-

mental Inspector in CICA from 1998 to 2004 and developed the agency's methodology and guidelines for public participation in the environmental impact assessment process.

80. It is important to distinguish between project-specific public input and public involvement in policymaking. International access principles include the right of the general public to participate in environmental policymaking at every level. To date, environmental laws and policies have been initiated and developed within CITMA and its agencies, with limited input from NGOs or the general public. This is an area that Cuban environmental officials have recognized as in need of improvement, and in fact is one of the priorities of CITMA. The process on updating and revising the 1997 National Environmental Strategy for the 2005/2010 period is being carried out with a broader participation of NGOs, many of whom also participated in the Rio + 10 process (see *Cuba: Environment and Sustainable Development, 10 Years After Rio De Janeiro Summit*, CITMA 2002), and in the Johannesburg Earth Summit in 2002. The latest draft of the updated strategy explicitly recognizes the need for greater involvement of NGOs and the civil society in the environmental decision-making process, and also in the implementation of the environmental requirements. With Resolution 130/95 of CITMA regarding environmental inspections and subsequently with Law 81, a "popular inspector" was conceived, in order to empower people from the localities — local leaders, people that live in coastal areas and other places of difficult access — in order to broaden the enforcement activities, and make it more participative. See Kanepa Gonzalez, "Public Participation in the Environmental Decision Making Process in Cuba."

81. Kanepa Gonzalez, "Public Participation in the Environmental Decision Making Process in Cuba," 13–15.

82. Law 81, Articles 67–69.

83. Administrative sanctions relating to soils are in Decree 179/93, to fresh water in Decree 199/95, to marine fisheries in Decree-Law 164/96.

84. The scope of this enforcement authority is set forth in more detail in Resolution 19/2000 of CITMA.

85. This is the case for air pollution where the current standards are outdated, mainly because of the complexity of measuring, monitoring, and controlling sources of air pollution. There is a Technical Committee for the approval of environmental standards, which is jointly coordinated by DMA and the National Standardization Office. The Committee divides its work in five areas: water, atmosphere, solid wastes, soils, and environmental management. The areas in which standards have been finalized so far are soils and environmental management. Approval is pending for standards for water supply and drinking systems. With respect to solid wastes, standards are pending for health facilities and for industrial wastes. Standards should be completed for air emissions in 2006.

86. Enforcement under DL 200 started at the end of 2001. Some of the more important enforcement actions so far have included the temporary closure of the beer factory "Pedro Marrero" in Havana City (Resolution 6/2002 CITMA), the temporary closure of the "Empresa Tenería Habana" (Resolution 8/2002 CITMA), the temporary closure of the Sugar Enterprise (Central Azucarero) in the province of Holguín (Resolution 1/2003 CITMA), and the permanent closure and demolition of two tourist installations located in the coastal zone (Resolution 2/2004 CITMA). Several other enforcement actions were taken at the territorial level dealing with, for example, tourist installations that were causing too much noise. The usual enforcement action in these cases has been to make closures temporary, because in each case facility operators prepared an environmental remediation plan. Once required improvements are made to bring the facility into compliance, the closure order is lifted. In the case of the installations in the coastal zone, temporary closures would not have been sufficient to mitigate the damage associated with the facilities and CICA required that the facilities be removed and relocated.

87. Law 81, Article 61.

88. CITMA is charged with the coordination of the board and with enacting the internal rules governing the board.

89. See Lindeman, "Sustainable Coastal Tourism in Cuba."

90. Common Cuban saying. In English: "There is a long distance between saying and doing."

91. Houck, "Thinking about Tomorrow," 525: "The bottom line is that environmental protection in Cuba is not a charade; it is happening."

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