INCREMENTALISM IN CUBA: DEMOCRATIC-ECONOMIC REFORMS AND SUSTAINABLE MANAGEMENT

EDWARD J. MARTIN
Graduate Center for Public Policy and Administration
California State University, Long Beach

MATTHEW S. PIMENTEL
Andahuaylillas, Peru

ABSTRACT

Much of the Cuban economy came to depend on the majority of its exports sold to the Soviet Union and Eastern Bloc countries. Yet when the Soviet Union collapsed in 1989, Cuba found itself in a state of economic depression. Cuba then began searching for an economic strategy that would salvage its economy while not abandoning its socialist and Marxist revolution. Eventually Cuba opted for an economic and environmental policy strategy based on the principles of sustainable economic development. In doing so, Cuba has simultaneously implemented piecemeal democratic reforms at local levels throughout the country. Cuba is also starting to address their struggles with poverty through sustainable development policies. This investigation will focus on the economic and environmental transitions that are currently under way in Cuba. It will also explore the particular economic and environmental strategies that Cuba is implementing on an incremental basis.
INTRODUCTION

After World War II, the United States (US) increased its efforts throughout the world to maintain global domination by using its military as an instrument of neocolonial occupation. As a consequence to the 1959 Cuban Revolution, and its eventual alliance with other socialist and Marxist countries, US foreign policy has placed highest priority on attempting to overthrow Cuba for challenging US hegemony in Latin America. In large part, this was due to the Cuban revolutionary junta which implemented extensive land reform measures and nationalized foreign investments, namely those of US corporations doing business in Cuba. The economic void left by the US was then filled by the Soviet Union which seized the opportunity to expand its markets by offering Cuba cheaper access to oil, cars, infrastructure development, and technological advancements instep with those of the Soviet Union. Cuba in turn would offer the Soviet Union and Eastern Bloc countries sugar, tobacco, nickel, and tourist destinations.

Shortly after the Cuban revolution, the ruling junta implemented a number of policy strategies directed at improving the lives of the poorest and most marginalized persons in Cuba (Fagen, 1969; Anderson, 2005). In addition to the redistribution of land and the nationalization of foreign investments, the policies that the junta prioritized entitled peasants – and the entire population – to housing, healthcare, leveled access to education, electricity and potable water in rural areas, eradication of hunger also defined as “absolute poverty,” and full employment. Public sanitation was improved and expanded throughout the rural areas of Cuba. Women were given increased priority in the labor force and were also encouraged to take advantage of opportunities in higher education. Racial discrimination was made illegal and Cubans of African decent were
increasingly employed in administrative and managerial positions (Bohmer, 2009).

Suffice it to say, Cuba’s record of democratic change through its revolution has manifested itself in post revolutionary Cuba through the suspension of civil liberties, questionable human rights violations, confiscation and redistribution of land and financial assets, nationalization of foreign investments, and summary execution by the ruling junta of Cubans alleged to have committed atrocities during the Batista regime. These apparent violations, nonetheless, appeared to undermine and deflect any efforts to establish an authentically democratic Cuban revolution. On the other hand, Cuba’s experience of democracy and respect for civil liberties and human rights prior to the Cuban revolution was non-existent (Wallerstein 1992, 1975). In fact, as part of the Spanish colonial system for hundreds of years, Cuba’s internal political structure was dependent on the dictates of the Spanish monarchy as a colonial territory while its economic structure was based on the expropriation and exportation of cheap cash crops back to Spain for market export to other European countries, primarily. This colonial model continued even after the Spanish-American war at the turn of the twentieth century. In the Spanish-American war Spanish territories such as Cuba, Puerto Rico, and the Philippines were relinquished to the US primarily so the US could establish its imperial design for hegemony in all of Latin America. Then, throughout the 1940s and 50s, the US backed Batista regime in Cuba came under increased scrutiny for some of the worst human rights violations in Latin America. Arguably, these violations led to the violent overthrow of the Batista regime by Fidel Castro and his revolutionaries (Kennedy, 1989; Chomsky, 1988; LaFeber, 1984).
DEMOCRATIC-ECONOMIC REFORMS

The legacy, however, of Cuba’s colonial past was not easily altered by the Cuban revolution. Nor did the Marxist-Leninist trend of the ruling junta remedy all of Cuba’s socio-economic problems. Most Cubans still suffered from a scarcity of consumer goods, a lack of capital investment, and marginal improvement in its economic standard of living. Worker productivity remained low for decades and decisions about economic efficiency, productivity, and performance were generated from high level administrators in a top-heavy government bureaucracy. Foreign investment in Cuba’s economy from countries such as the Soviet Union, China, Canada, New Zealand, Australia, Spain, Netherlands, Denmark, and Sweden, remained marginal. In fact, attracting further investment in the Cuban economy remained extremely problematic. Because of the nature of Cuba’s revolutionary government, pressure by the United States was placed on European countries against doing business with Cuba in the first place. Nevertheless, the gap that existed between the rich and poor prior to the Cuban revolution was reduced significantly as a result of the Cuban revolution (Ranis and Kosack, 2004).

Since the Cuban revolution, Cuba has for all intents and purposes remained economically dependent on the Soviet Union. Consequently, in 1989 the economic collapse of the Soviet Union devastated the Cuban economy. The economic relationship between Cuba and the Soviet Union represented an overwhelming majority of Cuba’s foreign trade, where the Cuban Gross Domestic Product (GDP) declined 34% by 1992. In effect the people of Cuba experienced a “great depression,” the effect of which surpassed anything in US history. As an emergency measure the Cuban government in 1993 shifted its economic focus from sugar export, which at the time had
very little demand on the world market, to tourism. This would be accompanied by other foreign investments primarily from EU and Latin American countries. Also, the unofficial introduction of the US dollar to the Cuban economy developed a black market in which workers were paid with dollars. Despite these efforts to bolster their economy, Cuba’s financial situation appeared pessimistic as it remained mired in a depression.

In addition to this, Cuba also struggled to survive the devastating effects of losing over five hundred thousand homes as a result of experiencing numerous hurricanes in that same time period. This natural disaster further crippled the Cuban economy by siphoning away scarce resources for emergency services and management. Raul Castro claimed that it would take Cuba upwards of 6 years to recuperate from spent resources from emergency relief. In addition to this, the loss of homes, sharp increase in food prices and transportation, direct medical attention, and public health measures from emergency relief compounded the devastation of the hurricanes. Then in 2008, Cuba experienced a price decrease on the world market of its major mineral export, nickel. This had a significant impact on Cuba’s economy since the loss of revenue from nickel impacted other dimensions of Cuba’s economy. Coupled with the fact that the international community has cut back on foreign investments in Cuba, e.g., Canadian, Spanish, and Italian companies in particular have suspended capital investments, and in some cases divesting completely, Cuba continues to experience economic difficulties, which has lead to a 70% deficit in Cuba’s trade. On the other hand, tourism has managed to thrive, with over 2 million visitors in the year 2008 (Coonradt 2008; Kollbrunner 2009).

Nonetheless, while Fidel Castro and the more conservative communists have been reluctant to welcome market reform and foreign investment to Cuba, that is, based on some limited private ownership and local
innovations on “free trade” theory, Raul Castro, the brother of Fidel, has been more amenable to such changes. Indeed, Raul has welcomed them precisely because of the economic hardships and natural disasters that Cuba has experienced. The argument has been that privatizing to some degree would take pressure off the government to provide economic resources. Thus Cuba, under Raul’s new leadership, has embraced a more pragmatic and incremental approach to market reform by encouraging economic innovation and some small experiments in local democratic self-governance. These market and democratic reforms have been similar to the ones that have taken place in China, nevertheless, under the auspices of single-party rule. After Castro had remitted presidential control of Cuba, his brother Raul was “elected” to replace him. Signing human rights accords with the United Nations (UN) and several other groups, Raul quickly demonstrated Cuba’s commitment to economic and democratic progress.

One example of this change can be identified in the new agricultural policies Cuba has adopted, granting ownership rights to local farmers where farmers would grow, harvest, and sell whatever the local markets demanded. The Cuban government has also sought to abolish salary equality in favor of flexible negotiations with workers. While a form of minimum wage is maintained in Cuba, agricultural workers and small farmers can negotiate wages above this minimum. In addition to these economic reforms, Cuba has also allowed local democratic initiatives in governance where Cubans meet in local settings to discuss their particular public policy needs. This form of self governance is new since Cubans can voice, not only their decent with respect to the public policies of the Cuban government itself, but also create policies at the local level with respect to agricultural needs (Coonradt, 2008; Kollbrunner, 2009).
CHANGES IN FOREIGN POLICY

When the Obama administration was voted into office, many policy suggestions were made regarding the lifting of sanctions by the US on Cuba. Yet with the European Unions’ (EU) abolishing of political sanctions on Cuba, came the concomitant response of US protest. The collective voice of several presidents in Latin American countries (Mexico, El Salvador, Nicaragua, Costa Rica, Brazil, Ecuador, Peru, Argentina, Chile, and Venezuela) has expressed serious concern about the US’s current policy towards Cuba (Kollbrunner 2009). Presidents in the region have suggested and even threatened the cutting of diplomatic ties with the US until the embargo is abolished. The greater world community has voted through the United Nations (UN) for at least 17 consecutive years that the US should drop the sanctions. As support for the embargo diminishes, so also has the support by Cuban-Americans.

It is worth noting that Cuba has survived over 50 years of such an embargo. This flies in the face of what the US has wanted for over half of a century, that is, to pressure Cuba economically in order to force a regime change that would be acceptable to US interests in the region. The Obama administration, on the other hand, has decided to move in another foreign policy direction with respect to Cuba. It is the administration’s intent to encourage a number of interested US companies to follow in the footsteps of Canadian and other EU companies who have made significant financial investments in Cuba. However, certain groups in the US are highly critical of Canada and the EU’s decision to lift sanctions without any framework to which Cuba must adhere. One example of conservative resistance of opening trade with Cuba is that human rights reforms must necessarily be a precondition for doing business in Cuba. More specifically, this usually
translates into some form of ultimatum in which Fidel Castro and the ruling junta would need to be exiled from Cuba and the Cuban communist party would be abolished. Yet Canada and most EU countries argue that establishing trade with Cuba is a positive step forward which implies that Cuba will be incentivized to take even greater steps toward a more democratic society (Coonradt 2008). Thus while Canada and the EU have become Cuba’s most advantageous trading partners, US companies lose out on potential markets and investments in Cuba.

The EU has also demonstrated its own ability to navigate the economic waters of the global trading community. Ultimately the US was unsuccessful in convincing the EU to maintain some economic sanctions. The US’s main concern was publicly noted as nothing more than dismay about whether or not the EU was bolstering the Cuban regime’s legitimacy. Certainly the US’s penchant and resolute dedication to undermining Cuba and making it completely insular have done less to question the legitimacy of Cuban politics and have done more to procure endemic food shortages and even animosity between Cubans on the island and in the States (Coonradt 2008). What needs to occur on the part of the US is to initiate a diplomatic effort in the direction of Cuba based on economic trade. As it stands, the actions taken by the US toward Cuba possesses the possibility of undermining democratic initiatives which are starting to emerge in Cuba. It is crucial to note that these developments are taking the form of local independent domestic economic initiatives, as explained, and also in the form of sustainable development strategies through the guidance of international organizations and countries friendly to Cuba, such as Italy and Costa Rica (Martin, 2004).

In order to address their economic challenges, the Cuban government has recently initiated agricultural, environmental, and economic policies based on sustainable
development strategies. Sustainable methods integrate innovative techniques such as organic farming, urban gardens, limited private ownership, renewable energy, and cooperative management of agricultural initiatives in order to augment the supply of goods and services throughout the nation. Farmers are now encouraged to sell their goods in excess of what the state requires at normal prices in a “market” environment. Such reforms have greatly developed the production of agriculture and, as a result, food consumption and related profits have grown even though meats other than pork are far too expensive for general consumption. As a result of these changes, some have argued that Cuba is starting to initiate incremental democratic reforms at the grass roots level based on sustainable techniques, and ironically, quasi-black market techniques.

**SUSTAINABLE DEVELOPMENT**

The doctrine of sustainable development asserts that growth and development must maintain ecological limits in the broadest sense of the term (Merchant, 1992). The concept originated from the World Conservation Strategy Report in 1980, and further developed in the Brundtland Commission Report of the World Commission on Environment and Development in 1987 (WCED), *Our Common Future*, which described “sustainable development” as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (p. 43). These are the latest expressions of a long-standing ethic with regard to the human community’s interrelationship with the environment and the current generation’s responsibilities to future ones (Solow, 1993). The fundamental notion of sustainable development is based on the concepts of *intergenerational equity* (fairness to posterity) and
*intragenerational equity* (fairness to contemporary persons) as stated at the United Nations Conference on Environment and Development (UNCED) in 1992. In very direct terms this explicitly means that the intergenerational community is obliged to future generations to leave them with sufficient natural resources to sustain themselves and that the current generation must not satisfy itself to the extent that it depletes the natural resources of its successors. Sustainable development policies must therefore confront the dilemma of balancing multiple demands on limited resources as articulated at the Earth Summits in Rio de Janeiro in 1992 and Johannesburg in 2002.\footnote{See Agenda 21 policies, United Nations Division for Sustainable Development (2000) at \url{http://www.un.org/esa/sustdev/agenda21text.htm}, June 29, 2000, 1-2, retrieved March 17, 2011.} Slowing or stabilizing growth and depletion misses the point, as Daly (1996) points out, because sustaining growth may never be achieved. This is because the resource base on which humans depend is finite, and undermining it will result in ecological disaster that nullifies any attempt to promote generational resource equity (Schnailberg and Gould, 1994; Brown, 1996; Brown 1991).

One of the critical discussions within the discipline of sustainable development focuses on the neoliberal economic strategies that are seen as perpetuating the ecological disorder that is rampant in the Third World (Brown, 1996; Rifkin, 1991). Sustainable development, in contrast, is an effort to enhance the economic and environmental status of a population without compromising that of future generations. The critical point is that sustainable development policies are directed at fostering a deeper sense of community life while building partnerships and consensus among key stakeholders. Fundamental to these policies is the prioritization of human rights which demands some form of equitable distribution of economic
and environmental resources on a global scale (Cairncross, 1991; Broham, 1995; Schumacher, 1973). Thus the goal of sustainable development strategies is to prioritize both generational resource equity and rational carrying capacity (the maximum number of people that a given habitat can sustain for an indefinite period of time). Consequently, sustainable development can also be understood as a standard of equity, rooted in cultural values, that prioritizes the right of people to use natural resources democratically and secure basic human needs, in effect, prioritizing equity over economic effectiveness and efficiency (Brown, 1991; Rich, 1994).

In essence, sustainable development policies imply the notion of democratic popular control of resources and wealth. The implementation and management of these policies is being addressed through what has become known as postmodern public administration. Although many nations in the EU and Latin America (e.g., Italy, Spain, France, Costa Rica, Ecuador, Peru) are seeking to implement sustainable development policies, most of the managerial expertise is being directed through nonprofits and nongovernment organizations (NGOs) instead of state and government institutions. Known as “postmodern public administration,” non-profits and NGOs are attempting to address the fundamental needs of the poor and oppressed without becoming entangled in the particular politics of a given country (Wamsley and Wolf, 1996; Fox and Millar, 1995; Subramanian, 1990). It is within this context that non-profits, NGOs, and the country of Italy is providing Cuba with some direction in how to implement sustainable development strategies and management methods, that arguably, would improve the overall quality of life for Cubans (Wenz, 2003).

Some theorists and social scientists have argued that the logical outcome of Cuba’s socialist revolution has manifested itself in Cuba’s “green revolution” (Wenz, 2003).
Cuba, in spite of its economic hardships, has taken tremendous strides toward building a sustainable system, starting with the basics – feeding itself with organically grown, pesticide free, natural products and prioritizing local food needs over and above more profitable exports. The need for alternate fuels and developing alternative energy production capacity has even led Cuba to develop a nation-wide, integrated system wherein, for example, waste from sugar cane harvests are used to make bio-fuel, thus creating systems that mimic natural ecosystems. Cuba is also taking steps to eliminate energy waste both through conservation measures and by producing electricity where it is needed, locally and by diverse means (e.g., wind, solar, hydrogen power, etc). Finally, Cuba has doubled its forested area from 14 to 28 percent of its land area in two decades while conserving its wetlands and other wildlife reserves. In this sense the green revolution has benefitted Cuba. Yet, whatever the shortcomings of the recovery, Cuba has shown remarkable resiliency in the face of the cut-off of Soviet support. Having lost its powerful benefactor, Cuba can be said to be attempting to pursue a regime of economic self-sufficiency, assisted by a still modest degree of marketization.

Public Management

The United Nations Development Program (UNDP) is a department in the United Nations’ global development network (Fox and Millar, 1995). Its mission is to work with nations on their own solutions to global and national development challenges through the implementation of sustainable development strategies. In January 1999, UNDP-Cuba, in collaboration with the Italian government, launched the Program for Local Human Development (PDHL). This program supports hundreds of small-scale projects which include job training workshops, organizing waste management programs in rural villages, and
providing potable water through water treatment facilities in local areas (Guthrie, Ball, Farneti, 2010). Moreover, in accordance with the Millennium Summit 2000, Cuba has implemented sustainable development strategies which seek to: (1) decentralize administrative and technical capacities; (2) create sustainable social and infrastructure services; (3) promote local economic development; and (4) make greater efforts to include marginalized persons, such as women and minorities in decision-making strategies.

For development partners (non-profits, NGOs, foreign countries) interested in strengthening the UNDP strategies in Cuba, the PDHL program provides a programmatic framework through which specific initiatives can be formulated, managed, monitored, and financed. The strengthening and promotion of local mechanisms and capacities for management and integrated programming, already well formulated by Cuba’s national authorities, provide a platform for local development. The local planning process supported by PDHL establishes links to specific programs. These include: (1) integration of vulnerable groups into the dynamics of local and economic development; (2) support for initiatives integrating social, economic and environmental components; (3) local human development plans linked to the community’s territorial planning; and (4) co-ordination of different international initiatives to achieve expected impacts in the areas of interest to PDHL.

Currently, PDHL is operational at local levels in Cuba. It is here that the needs of the population and the potential of the region are expressed in the PDHL program. Local projects under the program are designed to respond to local needs and demands and, at the same time, to be sustainable. The operational structure of the local projects is formulated by work groups appointed by municipal and provincial governments. Also groups represent a broad range of stakeholders, including those from the health,
education, agriculture, welfare, environment and physical planning sectors and from Cuban NGOs and institutions. At the national level, the PDHL is linked to national policies and the Copenhagen Pledges through a National Coordination Committee composed of representatives from the Cuban Ministry for Foreign Investment and Economic Collaboration (MINVEC), UNDP, and the embassies of donor countries and other participating national and international organizations.

At the international level the PDHL promotes affiliation with networks in other countries committed to the goals of Earth Summit (environment), the Copenhagen Summit (social aspects), and the Istanbul Conference (human settlements). Positive results achieved by Cuba in the area of developments are disseminated, and the exchange of innovative experiences in the areas of interest to Cuba is facilitated. The PDHL/Cuba program was designed to serve geographically and socio-economically diverse regions of the country. Initially, the program operated in the provinces of Pinar del Rio (western Cuba), Granma (southeastern Cuba), and in Old Havana (urban areas). In 2001, the program was expanded to include four provinces in eastern Cuba, the country’s most economically depressed areas. They are Guantanamo, Santiago de Cuba, Holquin, and Las Tunas. Together, these areas make up 44% of Cuba’s territory.

The PDHL has been designed to function in partnership with similar programs in Europe and Latin America. A decentralized cooperation mechanism has been established to mobilize those social and economic actors in Europe and Latin America who are interested in formulating and implementing cooperation with their counterparts in the municipalities and provinces of Cuba. This model attempts to promote lasting relationships between organized local communities in Cuba and other countries while providing an opportunity to exchange
innovative solutions to create “common interest networks.” Such common interests include job creation, sustainability of services, environmental protection, measures for the social and economic integration of women and other vulnerable groups. The outcomes include the completion of 241 local projects in sixteen municipalities. These were formulated on the basis of needs identified at the provincial and municipal levels. They have directly benefited more than 600,000 persons, and indirectly, more than 2,340,000. Training initiatives have led to the potential economic empowerment of 11,450 persons while over 4,000 jobs have been created, of which 2,448 were filled by women.

**Incremental Projects**

Several interrelated democratic-economic and sustainable projects have become successfully implemented in Cuba as a result of UNDP and PDHL policies. Specific noteworthy projects include:

- **Recycling of urban solid waste.** This initiative, in several districts of the capital of Pinar del Rio province, promoted by the Umbria and Cecina (Italian) PDHL Committees, is designed to foster environmental education while, at the same time, providing sources of income to women and the disabled through the recovery of raw materials for recycling and compost. Environmental conditions in the involved districts have improved dramatically.

- **Support for the water supply system in Manzanillo.** With support of the Emilia Romagna region in Italy and the port of Naples, the city of Manzanillo (a bay city in Eastern Cuba’s Granma province), has revamped its deteriorated water system, making it much more effective.

- **Creation of flower farms, opening new jobs for women.** Approximately thirty women and six men
have found jobs in two PDHL-sponsored flower farms near Bayamo, Granma province’s capital city, where two outlets sell flowers and floral arrangements.

- **Production of bricks and other construction materials.** This project took over a construction materials depot in Pinar del Rio’s capital and installed machinery for the production of low-cost bricks and tiles for construction purposes. The project created five new jobs, two of them for women, and helped meet the need for construction materials in neighboring districts.

- **Development of traditional trades.** Sponsored by the Florence (Italy) PDHL Committee, this project recruits young people and trains them in traditional, largely lost arts and crafts. Work places are provided for young artisans to develop their abilities.

- **Production of medicinal herbs and plants.** Exploiting Cuba’s rich store of medicinal herbs and plants, a system has been created for the production and processing of medicines from these plants, thus supplementing industrially produced drugs and pharmaceutical products. At least sixty local women in Pinar del Rio are working in this project.

- **Development of computerized municipal geographical information systems (GIS).** These systems provide a valuable tool to municipal planners and administration officials to improve local programming and administration.

These implemented programs in Cuba have also included coordinated programmatic action by UN agencies and NGOs, such as UNOP – United Nations Office for Partnership, UNOPS – United Nations Office for Project Services, UNIFEM – United Nations Development Fund
for Women, HABITAT – United Nations Human Settlement Programs, UNICEF – United Nations Children’s Fund, WFP – United Nations World Food Program, UNESCO – United Nations Educational Scientific and Cultural Organization. Cuba is also maintaining bilateral cooperation with countries such as, Italy, Switzerland, Belgium, France, and Sweden, along with fourteen participating national and international NGOs, one hundred and twenty-three participating European local governments and more than 240 participating associations and entities within Cuba. These include universities, municipal services, study centers, chambers of commerce, and solidarity associations.

The remarkable success of this UNDP program in Cuba must in large measure be attributed to this web of partnerships which has fostered the creation and consolidation of local, multi-sector operational structures based on provincial and municipal working groups. This structure has facilitated the establishment of integrated processes of local development and has also supported international cooperation in strengthening these processes. Thirty-three local working groups employ more than fifty full-time local professionals and intermittently employ or consult with another three hundred and fifty professionals. Moreover, these externalities have resulted in building the capacities of the working groups to identify needs and to formulate and manage projects while, at the same time, focusing on gender issues.

In terms of the implementation process, the most significant results of the PDHL program in Cuba have been the strengthening of democratic efforts at the local level through the direct participation of persons and communities. This has been reflected in growing participation as well as in the continuing development of management capacities. Thus the creation of specific technical and administrative instruments in the service of
local development have resulted in: (1) the use of geographical information systems (GIS) in the formulation and management of municipal and provincial development plans; (2) the creation of management and purchase mechanisms at the municipal level; (3) cross-sector programing mechanisms at the municipal and provincial levels; (4) the creation of small-loan (micro-loans) facilities to promote small and medium businesses; (5) changes in the variety of and ways in which social services are provided – community centers and subsidized housing for the elderly, for example, and education for disabled children; and (6) a focus on information measuring “quality of life” rather than on quantitative data alone.

As a result of these outcomes the following can be concluded regarding the sustainable development activities in Cuba: (a) the potential for healthy economic activity and environmental awareness at the local levels is emerging; (b) efforts exist to involve communities at the local level in participative decision-making; (c) strategic management methods are designed to help local communities manage their economic and environmental interactions; (d) local communities and national government are utilizing geographical information systems (GIS) for developing municipal and provincial governments; (e) local and national governments are establishing facilities for small loans in order to promote business at the local level; (f) efforts at local and national levels are being reviewed as to changing how social services are provided and which kinds; and (g) national government has begun to focus particularly on data measuring qualitative aspects of life and not relying exclusively on quantitative data (UNDP).

**SUSTAINABLE MANAGEMENT**

In order to promote Cuba’s new domestic policies - in sustainable and economic development - and move them
in the direction of a democratic economy and environmentally sustainable society, three models should be considered for purposes of management and planning. These models are broad in scope yet highly adaptable for the use of any country. What is important here are the implications for the unique forms of planning needed by any country to promote sustainable economic development. The three models are based on: (1) David Pearce and Jeremy Warford’s “World Without End,” (2) Robert Costanza’s “Three General Policies for Sustainability,” and (3) Herman Daly’s “Three Institutions for a Steady-State Economy.” These three sets of proposals are intended to achieve environmentally sustainable development goals.

**World Without End**

Both Pearce and Warford assert that sustainability demands that “capital” be understood as a means to an end for people and societies in terms of environmentally sustainable well-being, and that “critical environmental assets” not be depleted recklessly as to endanger a particular society and culture (Pearce and Warford, 1993). This would include risk-managing various environments inclusive of niches, enclaves, habitats, and even entire biospheres, that are crucial for supporting life. Pearce and Warford claim that sustainability, within this context, must include three key elements in order for governments to promote sustainable development within any given society.

**Element 1: Sustainability Indicators: Changing the National Accounting System.** Progress toward sustainability requires accurate assessments of the environmental impact of the prevailing development trajectory. Since current systems of national accounting fail to capture environmental effects, new or revised measures of economic activity and environmental conditions must be developed. Three directions are suggested. First, a set of environmental indicators are
needed to track long-term environmental trends to give advance warning of adverse effects which might threaten sustainability. Second, the development of an accounting system is important in order to accurately in order to record the amount of resources being spent. Third, adjustment of national financial accounts to include environmental impacts is critical. Ultimately this approach would lead to a procedure for estimating sustainable income.

Element 2: Correcting Prices. In a market economy prices play the key role in mediating production and consumption decisions. Therefore it is essential that market prices reflect real costs. First, to “correct” prices, state subsidies which lower prices below private marginal production costs should be abolished. Second, prices should be adjusted towards full marginal social costs – that is to say they should incorporate the costs of environmental externalities. Third, a “user cost” should be added to the price of non-renewable resources, and the price of renewable resources that are being harvested unsustainably, in order to cover the costs of the replacements future consumers will have to use. Such adjustments to pricing are to be secured through some combination of “command and control” regulation where polluters are forced to conform to given standards to achieve some specified reduction in external effects through taxes and other market-based incentives.

Element 3: Project Appraisal. When new development projects are to be authorized, environmental valuation should be incorporated into economic calculations. Benefit/cost analysis provides an array of tools to carry out this task. In general, projects should only proceed if social benefits minus costs (suitably discounted) are greater than zero and the full environmental costs and benefits (including use value, indirect use value, option
value, and existence value)\(^2\) are included in these calculations.

**Three General Policies for Sustainability**

Costanza argues that sustainable development must include the important dimensions of economic scale and the “systems” method of physical throughput. Understanding the limitations within a particular biosphere, consumption and depletion of raw materials and the production of waste cannot, from an environmental perspective, continue indefinitely. According to Costanza, understanding the sizable ecosystem damage that already impacts the planet, and the expending of irreplaceable “natural capital,” would be optimal for particular biospheres, and the planet itself, to implement a “constancy of total natural capital rule.” This would halt the erosion and depletion of the natural capital base (Costanza, 1994, 1991). Three key elements are necessary for this sustainability model.

Element 1: *Natural Capital Depletion Tax.* Throughput of total natural capital could be held constant (or if necessary edged downward) by the imposition of a natural capital depletion tax on non-renewable natural capital – particularly energy use. The tax, from which the bulk of public revenues could be derived, would induce adjustments in the price of goods and services throughout the economy. Exemptions could be granted where consumption of non-renewable natural capital was balanced by investment in extending sources of renewable natural capital. The system would offer incentives for producers to make efficiency gains in non-renewable natural capital usage, and to shift towards renewable resources, while limiting throughout to protect society in case the faith of

\(^2\) See Pearce, Markandya, and Barbier for more detail on these terms in *Blueprint for a Green Economy.*
the technological optimists in unbounded technological innovation proves misplaced.

Element 2: The Precautionary Polluter-Pays Principle. To make operational the precautionary approach, and ensure that potential polluters take account of the uncertain negative environmental impacts of their ongoing activities, economic agents would be obliged to post an assurance bond adequate to cover the current best estimate of the maximum environmental damage their activities might potentially inflict. The bond would be held in an interest-bearing escrow account for a predetermined period. If damage did occur, the funds would be used for the clean-up or to compensate victims. If damage did not occur within the agreed time frame the funds would be returned with interest. To the extent that the producer could establish in the interim that the potential worst-case impacts were less than initially calculated, portions of the bond would be reimbursed early. This scheme shifts the burden of proof regarding uncertain activities onto the economic agents undertaking these activities. It brings the costs of uncertainty forward in time and provides powerful incentives for agents to adopt more benign processes or to conduct research to reduce uncertainties.

Element 3: Ecological Tariffs. In the absence of international unanimity to adopt natural capital depletion taxes and mechanisms of environmental assurance bonding, states or trading blocks which would introduce such measures could invoke a system of ecological tariffs to prevent an inflow of goods and commodities produced under pollution-tolerant conditions. The imposition of countervailing duties would not violate international trading rules because it imposes equivalent costs on domestic and foreign producers. Revenues from the tariffs would be invested in natural capital, ideally by cycling them back into the country on whose imports the tariff had been imposed.
Three Institutions for a Steady-State Economy

Daly is a well-known advocate of the “steady-state economy” model, which is essentially an economy with a fixed and ecologically sustainable level of material throughput. Economic development and raised living standards are not precluded, but they must be purchased from an increasingly efficient utilization of a constant resource flow. The three elements discussed here were put forward in 1977, well before the current debate about sustainable development took off (Daly, 1977). While Daly still endorses the notion of the steady-state economy, he nonetheless has come to accept that the suggestions enumerated here are unlikely to win political acceptance.

Element 1: Depletion Quotas. To cap material flows through the economy the government would need to administer a system of depletion quotas, physically limiting the quantities of resources which could be extracted each year. For renewable resources the quota would be fixed at the maximum sustainable yield. For non-renewable resources it would be set at a level so that the resultant resource price was, at least, as high as that of the nearest renewable substitute. Depletion quotas would be auctioned periodically and limits on quota purchases would prevent monopolization of supply. Aside from restrictions on economy-wide material inputs, firms and consumers would be left free in their production/consumption decisions. Higher prices for non-renewable resources would encourage efficiency, a shift to renewable resources, and recycling. In contrast to a tax-based depletion scheme, depletion quotas would decisively cap throughput.

Element 2: Transferable Birth Licenses. An essential characteristic of a steady-state economy is to maintain the birth rate at replacement levels for a stable population size. This would mean that a system of transferable birth licenses would be introduced. Birth permits would be distributed equally, and in sufficient
numbers to maintain population balance, that is, approximately one entitlement per person, or two entitlements if they were distributed to women only. Permits would be freely transferable as a gift or a bequest, or through market exchange. Those with little interest in raising children would be free to alienate their entitlements, while those who wanted more offspring could set out to accumulate additional licenses.

Element 3: Distributionist Mechanism. Under the conditions of a steady-state economy, the absence of brute throughput growth would preclude a “trickle-down” effect, and wealth might become ever more narrowly concentrated. Several distributional mechanisms would be required to preclude this outcome. This would mean that existing welfare programs would be replaced by a guaranteed minimum income to be administered through the federal tax system. This would also mean that maximum limits for wealth and income would be established.\(^3\) All accumulations of wealth above this level would be redistributed, and income above permissible levels would be taxed at 100% marginal tax rate. Furthermore, anti-monopoly rules would restrict the maximum size of corporate concentrations of wealth and power.

What can be concluded about the three models presented by Pearce and Warford, Costanza, and Daly, is that these models are being identified as appropriate for Cuba in order to help Cuba transition away from state socialism to a more democratic economy and environmentally aware social and political life. In fact, throughout Latin America unique examples of the implementation of sustainable development methods are

starting to emerge, especially as a counter strategy to neoliberal and neoconservative models of economic development. Though arguably these models possess perceived strengths and weaknesses, they nevertheless represent a forward-looking strategy to move Cuba, and for that matter, Latin America in the direction of environmentally responsible self-sufficiency and economic well-being. Ironically, this presents an economic-environmental strategy that developed countries could benefit from given each countries policy priorities.

CONCLUSION

Essentially, the Cuban revolution of 1959 was, for all intents and purposes, a nationalist uprising which experienced brood support from Cubans as a result of human rights abuses and political corruption from the Batista regime. The Cuban revolution clearly promoted an anti-colonial worldview and Cuba was therefore forced by the US into a cold war alliance with the Soviet Union. As a result, Cuba found itself politically and economically alienated, especially after the Soviet Union collapsed. Cuba was then faced with two economic policy choices when its economy was devastated in the 1990’s. One choice was to maintain the command economy model of the past where economic needs were planned and forecasted by its central government. However, Cuba at that time needed immediate positive economic results and therefore some market innovations became appealing to the Cuban leadership. These policy implementations were also hastened by the natural disasters that Cuba experiences in the recent past. What emerged from Cuba’s economic struggles was a policy direction based on the quasi-market models similar to those used by former socialist countries such as China, Russia, and many Eastern European countries. Thus revisionist notions of capitalism and free
markets were no longer ideologically identified with code words for economic plunder and oppression.

This economic approach appeared to be the most feasible choice for Cuba since the former socialist countries seem to have experienced positive results with market innovations. However, as Cuba has begun to implement incremental market changes in its economy and greater efforts to promote local democratic initiatives, European countries have simultaneously begun to work with Cuba by implementing sustainable economic and environmental development strategies. Even the US, for example, is starting to question its century-long addiction to fossil fuel and move toward renewable resources for its transportation and energy needs. This is precisely how Cuba differs from China, Russia, and Eastern European countries; Cuba is embracing sustainable development policies and management strategies. Nevertheless what has clearly emerged in Cuba are the beginnings of a post-revolutionary “green” Cuba which is seeking to embrace local democratic-economic reforms and sustainable and environmental development strategies in planning for its future. Cuba has attempted to do this without abandoning its core socialist principles, at least at the rhetorical level. Indeed, with the assistance of European and Latin American nations, Cuba appears to be moving to the forefront of sustainable development planning and management and an integrated, managed sustainable ECO-ology-onomy-culture.
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