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## *Sustainable Development Versus Economic Growth: A Case Study on Natural Disaster in Nicaragua*

HEATHER LANE

*Nicaragua suffers from a severe institutional and geographic vulnerability to natural disasters, which has been further intensified in the past decade due to the effects of global warming. In October 1998, Hurricane Mitch had a severe impact on Nicaragua's economic and environmental development. Although Nicaragua has instituted many economic policies at the request of international lending institutions, the positive implications of these programs were reversed by the impact of the storm. A more sustainable development program must include social and environmental factors as well as economic measures to reduce this risk and move the Nicaraguan economy forward. Integrated efforts among the Nicaraguan government, international lending institutions, and international and local nongovernment organizations are needed to create sustainable development policy that will reduce vulnerability to future storms like Hurricane Mitch.*

**I**n the 1990s, the amount of damage globally due to natural disasters was more than U.S. \$200 billion. This is four times the amount it was in the 1980s due to the effects of El Niño and La Niña, which have caused an increase in the temperature of the earth's atmosphere and the oceans (Brown, Renner, & Flavin, 1997, p. 70). As a response, policy makers have been trying to implement sustainable development programs to prevent further devastation to countries most prone to natural disaster. One such country is Nicaragua, which has suffered throughout its history from natural disasters such as hurricanes, earthquakes, and volcanic eruptions. With the climatic phenomenon of El Niño, Nicaragua has suffered from increased forest fires, droughts, and floods in the past decade alone. The most severe of these natural disasters was Hurricane Mitch, which struck Nicaragua in October 1998, causing severe rains, floods, torrents of mud and trees, and landslides to tear through communities in many parts of the country.<sup>1</sup>

The total damage caused by Hurricane Mitch totaled U.S. \$1.5 billion and was the equivalent of 61% of Nicaragua's gross national product

1. Just after this article was written, in December 1999, storms devastated Venezuela, killing thousands of people in Caracas and in surrounding areas. The situation in Venezuela is very similar to that in Nicaragua after Hurricane Mitch, demonstrating the increased severity of these countries' vulnerability to natural disasters without having a true and workable sustainable development program in place.



(GNP) (Banco Nacional de Nicaragua, 1999). It left 2,863 people dead, 567,752 injured, and another 36,368 affected (Sistema de la Integración Centroamericana [SICA], 1999).<sup>2</sup> With the advice of the International Monetary Fund (IMF) and other financial institutions, the Nicaraguan government has been instituting a number of economic structural adjustment programs to offset the economic damages caused by Mitch. However, the environmental and social damages of the hurricane are not being accounted for in hopes that the future economic stability resulting from the economic adjustments will offset the social and environmental impacts in the long run.

This article focuses on the economic adjustments and their effect on sustainable development. It demonstrates the importance of including three factors in deciding the optimal outcome of sustainable development: economic, social, and environmental development. Finally, using Nicaragua as an example, it explores the dilemma of sustainability versus the satisfaction of present human wants, without compromising the environment for future generations.

### *The Environmental Impact of Mitch*

In economic terms, poorer countries tend to have a low regard for the future compared to the present; therefore, they are more willing to exploit their natural resource base for an economic gain and are less concerned about its depletion. This means that market failures will tend to lead to overexploitation of natural resources rather than facing the costs of economic decline—at the expense of future generations. Thus, marginalized countries are forced into a downward spiral of economic decline leading to the overexploitation of natural resources, which leads to further economic descent in the future.

Due to the deforestation, forest fires, and deterioration of watershed basins that took place in Nicaragua before Hurricane Mitch, the damage caused by Mitch was intensified. Because of the difficulties associated with poverty, such as a lack of available land for agriculture and access to basic vital necessities, urban and rural populations had relocated to highly vulnerable areas, including riverbanks, lake shores, and mountain slopes. In addition, the only shelters these people were able to afford

2. Another serious problem brought about by the hurricane was the uncovering of hundreds of mines left by previous conflicts, as a result of the floods and mudslides. These mines pose another ongoing threat to the inhabitants and especially to children in the rural sectors where the damages occurred.

3. A further assessment of the impacts of Hurricane Mitch can be found in "Nicaragua: Respuesta del sector de la salud a los efectos del huracán Mitch." Obtained from the web February 1999 at [http://www.disaster.info.desastres.net/mitch/Nicaragua\\_esp.doc](http://www.disaster.info.desastres.net/mitch/Nicaragua_esp.doc).

were poorly built shacks, extremely vulnerable to large amounts of rain and landslides.<sup>3</sup>

With climate change resulting in an increased threat of natural disasters, underdeveloped countries such as Nicaragua are thrust into an even more drastic situation of economic and environmental decline. The immediate response of international lending institutions, along with the governments of these countries, has been to institute drastic economic adjustments to move the economy forward and to sacrifice environmental conservation in the short run.

### *Structural Adjustment in Nicaragua*

The structural adjustment programs (SAPs) of the World Bank and the IMF have encouraged developing countries to reduce imports and increase export volume to encourage the opening of their economies to external investment. This has led to a decline in terms of trade, so that the total value of export earnings has actually declined. Furthermore, many developing countries have only low-value goods and natural resources available for export, which has led to further resource depletion and annually decreasing revenues.

Economic indicators throughout the 1990s do, however, show positive results from the adjustment programs initiated in Nicaragua, as the country enjoyed its first positive economic growth in decades with a 2.7% increase in the mean annual growth rate of the gross domestic product (GDP) (SICA, 1999). However, Hurricane Mitch erased the positive economic changes made earlier as per capita income fell from U.S. \$485 to \$172 (Banco Nacional de Nicaragua, 1999). Nicaragua was again thrust into a period of drastic economic decline, making it the second-poorest country in the Western Hemisphere after Haiti.

Many of the structural adjustments in Nicaragua during the early 1990s were related to agriculture. Taxes were reduced on agricultural exports, and agricultural input subsidies were removed to reduce the drain on the budget, save foreign exchange, and improve the efficiency of resource use. This has increased Nicaragua's dependence on export agriculture and further marginalized the small subsistence farmers, which, in turn, has led to increased forest clearing and cultivation of agricultural lands, making Nicaragua even more vulnerable to natural disasters.

The World Bank and the IMF both grant short-term structural adjustment loans (SALs) to ease the short-run pressures of low-income countries. In Nicaragua, only 1.3% of the IMF loans before Hurricane Mitch were to be invested in projects of 12 months or more. Yet, 44% of the loans were relegated to projects of 1 to 6 months (Acevedo Vogl, 1998, p. 178). Because of the short-term nature of these loans, countries such as Nicara-

gua had not focused their economic policies on long-term investment projects such as sustainable development (Schydrowsky, 1995, p. 12).

The IMF also encouraged governments to change their spending priorities to debt repayment through the SAPs, which has reduced internal investment and social expenditures, further marginalizing the most vulnerable sectors of society (Reed, 1992, p. 10). With the SAPs, debtor countries had virtually no other choice but to place priority on generating current account surpluses. Thus, import restrictions were implemented to aid in the surplus. The import reduction led to lower investment, impeding economic growth and further expanding the fiscal deficits (Kohsaka & Ohno, 1996, p. 23).

In the 1990s, due to the undesirable environmental and social outcomes of structural adjustment, there was a movement away from the servicing of debt repayments to help countries with the highest amount of external debt in their development process. This was a new initiative by the IMF, started in September 1996, to provide future debt relief for these countries. By May 1999, the IMF had offered this debt relief to seven countries; yet, only three countries had actually received debt relief, none of which were gravely affected by natural disasters in 1998 (United Nations Department of Economic and Social Affairs, 1999). Nicaragua is continuing to pay off its external debt of U.S. \$6.2 billion to the IMF. Since Hurricane Mitch struck, it has paid \$170 million to the IMF, in contrast to the \$190 million it invested in reconstruction efforts (Banco Nacional de Nicaragua, 1999).

For true sustainable development to take place, it is very important that debt-servicing requirements are not permitted to remove funds from necessary spending in areas relevant for sustainable human development. The restructuring of debt programs is necessary in helping highly indebted poor countries (HIPC) to boost their economic growth. This is especially true in countries that rely on one or few agricultural exports, such as Nicaragua. A high level of debt service tends to accentuate monoculture-based agriculture and increases the rate of depletion of natural resources beyond the limits of sustainability. A recent article by the United Nations Executive Committee on Economic and Social Affairs stated, "the countries struck by Hurricane Mitch in late 1998 require special 'post-catastrophe' relief, in a situation where the necessity of reconstruction must take precedence over external debt-servicing obligations" (United Nations Executive Committee, 1999).

### *The Solutions*

Policy distortions, market failures, and underinvestment in human resource development have been the root causes of environmental deg-

radation. Many solutions have been offered in response to the growing conflict between sustainable and economic development, all of them leading to the need for governmental policy reform. This policy reform must include the integrated efforts of local, national, and international institutions, as well as nongovernmental organizations (NGOs).

Some economists state that governments should offer property rights to poor farmers so that they will be encouraged to practice sustainable exploitation of the resources (Gillis, Perkins, Roemer, & Snodgrass, 1996, pp. 165, 186). However, this poses another problem due to the lack of cultivatable land existing as a result of the severe soil erosion in Nicaragua. With the devastation caused by the torrents of mud and water from Hurricane Mitch, there is even less cultivatable land remaining. Many rural *campesinos* have been left landless, and the Nicaraguan government has no way of providing property rights to these farmers.

Another solution offered by economists is to tax those who are practicing unsustainable development to offset the costs to the environment. This also proves somewhat problematic as most of the unsustainable use of land takes place in the hands of the rural poor, who are left with no other choice but to overexploit the natural resources available to them as a means of survival. Taxing them would only worsen their situation by furthering their economic marginalization. It has, therefore, become paramount to the governments of Nicaragua and other developing countries to institute programs of sustainable development. Although some such programs have already been initiated, it still remains uncertain how to coordinate these programs with economic growth initiatives.

The Nicaraguan government has been able to implement some quick-fix strategies for the alleviation of the social impacts of Hurricane Mitch with the help of foreign donations. By February 28, 1999, 3 months after Mitch, the Nicaraguan Housing Bank and the Secretariat of Social Action were able to construct housing for displaced families so that 4,000 families were relocated to help make up for the 23,854 homes that had been completely destroyed by Mitch. These agencies have also established a program to repair and improve 25,000 homes within a 3-year period (*Nicaragua: Huracán Mitch*, 1999). However, these homes were not located where water would be easily accessible, and there still remains the problem of available arable land for subsistence farming, as mentioned earlier. This only further intensifies the need for workable long-term sustainable development programs.

The Nicaraguan government has established a number of objectives for sustainable development, which incorporate an environmental and social aspect as well as economic readjustment. These include (a) enhancing democracy by strengthening local government public participation in environmental management and the rational exploitation of natural resources, (b) eliminating poverty and improving standards of

living through environmental protection and preservation, and (c) increasing the supply of goods and services for domestic consumption and diversifying exports (World Conservation Union, 1997, pp. 48-49). These program initiatives are being established with the help of MARENA (the Nicaraguan Ministry of Natural Resources) and with the active participation of a number of NGOs. MARENA and the National Council on Sustainable Development (CONADES) established an immediate plan of action for the restoration and defense of the forest inheritance, which includes the restoration of watershed basins. MARENA has also formulated corrective and preventative measures to prevent future natural disasters. Finally, the National Forest Institute has initiated a program of reforestation for the rehabilitation of the rural sectors most affected by Mitch (World Conservation Union, 1997).

International NGOs such as the Pan American Health Organization (PAHO) and the World Health Organization (WHO) have also begun short-term and long-term plans to alleviate the risk of natural disasters. Short-term goals include establishing an improved early warning system in Central America and the Caribbean, integrating the communication and scientific network between local and national governments, increasing institutional and professional capability to deal with the effects of natural disaster, and improving local response in at-risk communities. Because these communities are often located in areas that are not easily accessible to trained rescue teams and therefore must carry out the duties of search and rescue and attending to the wounded themselves, PAHO and WHO have encouraged the implementation of long-term educational programs at all levels within local communities. This would also help to create a culture of prevention and mitigation of natural disasters by incorporating environmental conservation into educational systems for long-term sustainable development (PAHO and WHO, 1999).

Financial lending institutions have also come to realize the importance of sustainable development programs over the past decade, as it has become evident that SAPs lead to the further unsustainable exploitation of natural resources. The Global Environmental Facility (GEF) is a joint effort of the U.N. Development Program, the U.N. Environmental Program, and the World Bank to provide grants and concessional funds to cover additional costs that countries incur in environment-related projects such as climate change, biodiversity loss, pollution of international waters, and depletion of the ozone layer (World Bank, 1999). Although these long-term efforts are strongly needed, it is also necessary for international institutions to recognize the importance of resource conservation and vulnerability reduction during the rehabilitation and reconstruction periods.

## Conclusions

There have been many lessons learned in the past decade with regard to the importance of sustainable development and economic growth. Countries have been forced to confront the serious implications of environmental unsustainability, economic decline, and the damages brought on by poverty and natural disasters all at once. As countries all over the world struggle to meet the environmental standards established at Rio and meet their own environmental needs, they have also been faced with the issues of confronting poverty and servicing debt payments. As is demonstrated in this article, these issues often conflict and adversely affect one another.

Through a coordinated effort among international institutions, national governments, and local representatives, the implementation of true and workable sustainable development programs can be more easily achieved. They must start to use noneconomic forecasting in determining policy outcomes to help stop the further marginalization of impoverished sectors and to ensure long-term benefits of environmental conservation for future generations. By focusing on the long-term outcomes of policy decisions on society, countries can better protect themselves against the negative impacts that are outside their control, such as natural disasters. Governments can also, then, be assured that they will be able to link the attainment of sustainability to the search for the satisfaction of present human wants, without compromising the wants of future generations.

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