# THE ECONOMIC COST OF ENVIRONMENTAL DEGRADATION AS IT RELATES TO AGRICULTURAL DEVELOPMENT

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I have noted with much appreciation, the interest shown by many governments and other development-oriented institutions in the environmental issues and concerns relating to the sustainability of development. This interest was most intense leading up to the 1992 United Nations conference on Environment and Development.

The Caribbean Region was no exception in this trend, In May 1990, a conference on the Public Policy Implications of Sustainable Development in the Caribbean Region was held in Kingston, Jamaica. Today, the theme of this Conference is described as "*Sustainable Agriculture and Economic Development in the Caribbean*". Our concerns over the environment, thus, are not new. At the heart of the concept of sustainable development is the idea of the prudent utilization and wise management of our environment and natural resource base. Sustainable development has been pointed out as being a matter of life or death for a natural resource dependent area such as the Caribbean.

In our Region, the productive activity has been one that has relied heavily on the natural resource base. Agriculture, forestry, fishing and tourism all depend for their economic success on a healthy and productive environment.

Yet, conventional policies of development and methodologies of project implementation in many of our countries have had a perverse effect on the integrity of our natural resources. This situation both regionally and globally, has injected in us the growing realization that some technologies and practices from developed countries do not always benefit us - that actions impacting on the environment in one part of the globe or of a region affect or have implications for other areas and that the knowledge of people at the grass root merits respect and attention in the development process.

In many parts of the world, agricultural diversification projects have been attempted with little to show for the effort. Natural resources such as forests, land, soil and water have been utilized and lost in these ventures. The incorporation of the value of these natural resources have invariably been excluded from the accounting system. The agro-industrial activity that destroys an original rainforest and the biodiversity it supports and that pollutes an aquifer with the use of fertilizer and pesticides, and that leads to loss of soil and soil productivity, is destroying the natural capital and depriving present and future generations of the benefits of these resources and other economic uses that could have been from the forest. These are costs which are felt now and will be felt by others and which at some point in time will have to be accounted for. Yet, none of these costs would normally appear on the balance sheet of this agro-industrial activity. Many governments and aid-oriented institutions have frequently encouraged unsustainable forms of development through their neglect to correctly allocate the cost of sustaining the environment. This is reinforced from a Caribbean perspective by Norman Girvan who stated:

> *In the Caribbean, environmental issues have so far been a stranger to the theory and practices of economics ... one reason for this is that the basic paradigm*

*of economics excludes consideration of the interaction between the human economic system and the wider ecosystem of which it is part ... Another reason is that the attention and energy of economic technocrats are absorbed by the demands of short-term economic management (balance of payments, debt and adjustment). The environment is regarded as a long-term problem or of greater concern to the developed countries, or to a specific group called environmentalists ...*

One wonders whether in some instances the agricultural expert can be excluded from among those economic technocrats that show little if any regard for the environment.

Delisle Worrell and Keith Worrell reinforced the perspective of Girvan when they stated that in the Caribbean the sustainability of current patterns of economic development is clearly in question on economic grounds, as consumption and aspirations constantly run ahead of productivity, and on environmental and aesthetic grounds, as economic growth defaces the landscape, degrades water supplies, decimates marine life and generates mountains of waste product.

What is called for is a system of national accounting that accounts for the degradation of non-renewable resources, and the degradation of the environment as a cost of generating the national income. Let us account for what is spent of the national wealth to produce the national economic income.

What is called for is the need for care of our crucial natural resources; the recognition that depletion of a particular resource may be justifiable in some cases; the avoidance of an irreversible process of resources deterioration, and the effort to develop substitutes and replacement of finite resources with alternative assets.

Across the globe, evidence is being put forward to show the constant degradation of land. One group of experts holds that one-fifth of the topsoil of the earth's cropland has been lost. Lester Brown in his *State of the World [1990]* pointed out that in the late 1970s Africa had experienced 23 per cent moderate agricultural land degradation, Asia 28 per cent, Australia 55 per cent, Europe 25 per cent, North America 23 per cent and South America 17 per cent. In this instance moderate agricultural land degradation was defined as the reduction of the land's potential yield by 10-50 per cent.

It has been estimated that in the 1980s the world's farmers lost a net amount of 240 billion tons of top soil from cropped lands. What do these data imply for the environment? What are the siltation implications of the loss of this amount of topsoil? With increasing populations and the demand for food, will this loss of topsoil require the destruction of more forests for cropland or the increase of fertilizer and pesticides for increase yields? Whatever action is taken, there will be environmental impacts and we need to assess the value of these impacts.

Recently, in Rio de Janeiro, at the Earth Summit, over 100 nations signed the convention calling for the protection of the planet's biodiversity. In the tropics where a major portion of the earth's plants and animals are found, the protection of biodiversity is crucial. We are all aware that biodiversity provides the material that is utilized to improve the quality of crops and livestock through the introduction of desirable characteristics residing in the natural gene pool.

Any destruction or deterioration of biodiversity is a loss to agro-industrial activity. It behoves us to include in the economic equation the cost of the loss of biodiversity when tropical habitats are destroyed.

The costs and benefits of maintaining biodiversity fall on different people. An example of this is where the pressure to save a threatened species comes from groups in affluent countries but where the cost of conserving it would be borne by poor farmers who need the land for subsistence. Adequate provisions need to be made to meet the costs, both of conserving biodiversity and of the opportunities forgone by such conservation, especially in developing countries.

During this decade, the supply and use of water could well be a dominant issue. This resource is important for life support. Water is crucial in food production; it plays a role in climatic regulation and it serves as a medium for absorbing waste. Yet, evidence shows that through our activities serious problems are arising in its use. There is a growing water shortage problem in the Middle East and

Mediterranean Regions. Here in Belize, water is a major issue out at San Pedro, Ambergris Caye, the tourist capital of Belize. As the water shortage problem increases regionally and globally conflicts with water use in the agriculture, household and tourism sectors will arise.

In our Region water quality and quantity is being threatened, through the indiscriminate use of water and disposal of wastes and wastewater from industry and households. This degradation of our water resources can pose a problem to the quality and quantity of food production. It is in the interest of agriculturalists to insure that adequate quantity of water resources are maintained and that policies to control water quality incorporate the "*polluter pay principle*".

This principle seeks to ensure the integration of the environment into the economic sphere by making polluters "*internalize*" the cost of use or degradation of environmental resources. This principle states:

> *the use of air, water or land for the emission, discharge or storage of waste is as much a use of resources as are other conventional factors of production such as use of labour and material inputs.*

Because of the lack of proper accounting for the use of these environmental resources, they are often times wasted, degraded and even destroyed.

Agriculture is one area of economic activity that is vulnerable to environmental changes. Climatic change could have serious consequences that exceed those of land degradation and salination problems. The reason for this is that global warming can change the pattern of precipitation; it can increase evaporation rates and climatic variations. We in the Caribbean being in a warmer climatic zone, could be the net losers. The issue of global warming which is a reflection of environmental deterioration will have significant impact on our agricultural activity. Are the sources that induce this global warming being taxed to compensate us whose agricultural productivity will be curtailed?

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