



Social Science

“Summary of article by George Foy and Herman Daly: Allocation, Distribution and Scale as Determinants of Environmental Degradation: Case Studies of Haiti, El Salvador, and Costa Rica” in Frontier Issues in Economic Thought, Volume 1: A Survey of Ecological Economics. Island Press: Washington DC, 1995. pp. 135-138

“Summary of article by George Foy and Herman Daly: Allocation, Distribution and Scale as Determinants of Environmental Degradation: Case Studies of Haiti, El Salvador, and Costa Rica”

(Editor's note: This article classifies and evaluates environmental problems in three Latin American countries: Haiti, El Salvador and Costa Rica. This summary only includes Haiti because of the similarity in both methodology and content of the three examples.)

Three related, but conceptually distinct causes of environmental problems are considered here in evaluating the environmental problems of Haiti: allocation, distribution and scale.

Concepts and Theory

The satisfaction of all human wants is ultimately derived from the environment, either directly or indirectly. Economic development has historically been characterized by a shift from direct to indirect use of the environment. Environmental problems are defined as any degradation in the assimilative and regenerative capacities of the environment. This degradation may occur due to reasons of allocation, distribution or scale.

Allocation refers to the flow of resources among alternative uses. Allocations are said to be optimal or efficient when prices of resources reflect their marginal opportunity costs. Misallocations of resources may occur due to government actions or market failures. Problems of misallocation are solved by encouraging policies that breed competition rather than rent seeking, and by developing institutions that define property rights in public goods settings.

Distribution refers to the division of output among individuals or families. Distributions may be categorized as just or unjust in an ethical sense, and as skewed or even in a statistical sense. Maldistribution of resources in an economy limits people's options and their participation in the political process, which may result in environmental problems.

Scale, which is a macro-level concept, refers to the total flow of resources through the economic subsystem, beginning with depletion of resources and ending with pollution. Scale depends on the population and the per capita resource use in an economy. The most important aspect of scale for an economy is whether it is sustainable or not. Sustainability depends on both the physical scale of the economy and the physical capacities of the environment.

It is important to clarify the distinction between allocation and scale: allocation decisions are micro in nature, and scale issues are macro. The primary reason for allocative efficiency is to maximize the present value of wealth of an economy, while the primary reason for scale criteria is to ensure the sustainability of the economy within environmental limits. Allocative decisions depend on prices, whereas scale decisions depend on ecological criteria. Efficient allocation of resources does not ensure optimal scale of the economy.

Case Study I: Haiti

The case study is divided into five sub-sections:

- 1) key environmental problems;
- 2) scale of resource use as a cause of environmental problems;
- 3) allocative causes of environmental problems;
- 4) distributional causes of environmental problems; and
- 5) recommendations.

1) **Key Environmental Problems:** Haiti's foremost environmental problems are deforestation and soil erosion. Only 7 to 9 percent of forest cover remained in 1979 in a country that was once completely covered by forests. While only 29 percent of the land is considered suitable for cultivation, 49 percent is actually cultivated. The depletion of forests has led to soil erosion, and deforestation and soil erosion together have resulted in declining agricultural productivity, increasing urban flooding, rural-to-urban migration, and loss of wood, a primary source of energy.

2) **Scale of Resource Use as a Cause of Environmental Problems:** Population increases are the primary cause of pressure on the land in Haiti, and are therefore responsible for soil erosion, especially because the fallow period when secondary vegetation and soils can regenerate has been drastically shortened. Haiti attempted to ameliorate its population pressures by encouraging emigration in the late 1970s, but recent policy changes in receiving countries have reduced the level of emigration. Per capita resource use is not high in Haiti, and it does not contribute substantially to the increasing scale of the economy. Population control is a prerequisite for Haiti to develop sustainably.

3) **Allocative Causes of Environmental Problems:** There are a number of reasons for misallocation of resources in the Haitian economy, including:

- a) There is inadequate expertise and personnel in both forestry and soil and water conservation.
- b) The government has imposed taxes on coffee exports and import restrictions on staple foods, resulting in a move away from coffee production to the production of staple foods. The local currency has also been artificially overvalued, thus discouraging export crops. Perennial coffee trees hold soil better than staple food crops, so soil erosion is an uncounted environmental cost of these government policies.

c) There is no mechanism for arranging mutually beneficial trades between those who cause soil erosion (uphill farmers) and those who suffer from soil erosion (lowland farmers and urban dwellers).

d) Lack of access to institutional credit markets for the majority of people makes investing in increased agricultural productivity difficult. Widespread tenant farming also reduces the incentives for making long term improvements in land, such as reforestation and soil conservation.

e) There is only a nominal tax on the collection of wood for energy needs in those areas where forests still exist. The low private costs of harvesting wood therefore provide a disincentive for forestry management and establishing plantations. Haitian energy policy is generally not designed to consider environmental impacts and trade-offs.

4) **Distributional Causes of Environmental Problems:** Widespread corruption has resulted in patronage and transfer of public resources to a privileged minority at below market prices. Corruption and abuse of power have led to a fear of state confiscation of lands from farmers - a major disincentive to invest in agricultural or environmental improvements. The inequitable distribution of land also means that vast numbers of people depend on marginal lands, which causes soil erosion. However, the pressure on land is due more to the scale of the economy than to maldistribution.

5) **Recommendations:** Population control must be the centerpiece of any Haitian resource policy. If it is not, anything Haiti does will only be delaying disaster. In addition, a massive analysis of land use and degradation should be undertaken and used as a basis to recommend suitable land management policies in the context of economic and social policy. Watershed reforestation and hydroelectric planning should also be integrated into a coordinated strategy. Given the political realities, bilateral and multilateral aid agencies should include non-governmental organizations in order to promote sustainable development and poverty alleviation policies.