

# Economic development and environmental protection assignment

[Sociology](#)



This paper argues on both theoretical and empirical grounds that, beyond a certain point, there is an unavoidable conflict between economic development (generally taken to mean 'material economic growth') and environmental protection. Think for a moment of natural forests, grasslands, marine estuaries, salt marshes, and coral reefs; and of arable soils, aquifers, mineral deposits, petroleum, and coal. These are all forms of 'natural capital' that represent highly-ordered self-producing ecosystems or rich accumulations of energy/matter with high use potential (low entropy).

Now contemplate despoiled landscapes, eroding farmlands, depleted fisheries, anthropogenic greenhouse gases, acid rain, poisonous mine tailings and toxic synthetic compounds. These all represent disordered systems or degraded forms of energy and matter with little use potential (high entropy). The main thing connecting these two states is human economic activity. Ecological economics interprets the environment-economy relationship in terms of the second law of thermodynamics. The second law sees economic activity as a dissipative process.

From this perspective, the production of economic goods and services invariably requires the consumption of available energy and matter. To grow and develop, the economy necessarily 'feeds' on sources of high-quality energy/matter first produced by nature. This tends to disorder and homogenize the ecosphere. The ascendance of humankind has consistently been accompanied by an accelerating rate of ecological degradation, particularly biodiversity loss, the simplification of natural systems and pollution.

In short, contemporary political rhetoric to the contrary, the prevailing growth-oriented global development paradigm is fundamentally incompatible with long-term ecological and social sustainability. Unsustainability is not a technical nor economic problem as usually conceived, but rather a state of systemic incompatibility between a economy that is a fully-contained, growing, dependent sub-system of a non-growing ecosphere. Potential solutions fly in the face of contemporary development trends and cultural values Ecological disturbance and nature tourism.

THE purpose of this article is to consider the role of disturbance as a crucial ecological consideration in land use planning for nature tourism.

Incorporation of ecological insights into the environmental-planning process offers hope for rational and sustainable development. Nature tourism has been proposed in recent years as a solution to the dilemma that developing countries face in conserving their biological heritage and concurrently improving the economies of local human settlements.

In Mexico, nature tourism has become a favored mechanism for development, especially on the Yucatan peninsula. Recognizing the immense value of its coastal natural communities, Mexico has recently established several large biosphere reserves to preserve natural resources and to accommodate and support human settlements. The experience of sprawling, high-impact Cancun, with more than one million visitors annually, has encouraged the government to reassess its development goals.

One example of Mexican openness to sustainable conservation-development projects is the innovative, cooperative effort of Mexico, Belize, Guatemala, El

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Salvador, and Honduras to establish Ruta Maya, a low-impact design to promote tourism based on natural and archaeological treasures (Garrett 1989). In the Yucatan, two long, relatively pristine barrier peninsulas, Rio Lagartos and Celestun, are being identified as opportune sites for nature tourism. Both have high conservation value and were designated special biosphere reserves by the government in 1979 because of their floral and faunal diversity.

Both have small human settlements based on fishing and salt extraction. The protection concept known as the Mexican modality, in which local villages can coexist with both conservation and tourism, is an ambitious development plan. Through trial and error, it is becoming clear that development must be guided by ecological understanding if degradation of natural systems is to be avoided. Sites worth visiting are often those that cannot endure heavy human use, and if irreversible environmental degradation results from nature tourism, both conservation of biological diversity and sustainable tourism will fail.

Although political and economic considerations usually far overshadow ecological concerns, conservation of natural resources will not succeed if ecological insights are ignored in planning for nature tourism. To retain the integrity of ecosystems, ecologists must convey the most useful information about the dynamic physical and biological contexts of natural communities, including information about the effects of human change on natural disturbance regimes. Important shifts in ecological theory in the past several decades could change perspectives on planning decisions.

Fundamental models of community organization throughout the history of ecological thought were rooted in the idea of equilibrium, and most principles applied to managing natural areas have been based on the notion of stability. Many recent empirical studies offer evidence that the natural world is not static, that natural disturbances are common to many environments, and that most landscapes are not in equilibrium, at least for the short term. Planners and developers of tourist facilities, along coastlines, for example, have mistakenly assumed that the physical context for hotels and roads was a stable place.

**RECENT ECOLOGICAL THOUGHT** From its beginnings, ecology has been the study of nature as a stable, orderly system. Natural communities that were undisturbed by people were generally thought of as pristine and immutable, composed of interdependent and harmoniously arranged species assemblages (Botkin 1990). This idea was based on a long tradition in Western culture that envisioned nature as orderly and was embodied in the phrase “balance of nature” (Glacken 1967). Largely through the writings of Frederick E.

Clements (1916) early in the twentieth century, the notion of natural communities as naturally occurring assemblages of species in harmony with local climatic regimes became ecological dogma. If a community was disturbed, damage would be repaired along a predictable continuum toward the climax community. Later, equilibrium became an explicit assumption for most ecosystems, a steady state to which a system returned if a disturbance altered its balance (Connell 1978).

Dissenting voices proposed that species act independently of one another and that perturbation is a common event in many natural communities (Gleason 1917; Watt 1947). Strong evidence for the commonness of disorder in nature has come from a large body of literature documenting the profound and pervasive effects of a multitude of disturbances—fires, floods, windstorms, alluvial erosion, landslides, grazing, insects, and invasion of exotics (Veblen and Ashton 1978; Bormann and Likens 1979; Sprugel and Bormann 1981).

It is now believed that all ecosystems are somewhat dynamic and that, in some, severe or even catastrophic disturbance is a regular occurrence.

Natural disturbances were once assumed to retard the orderly progression of species replacement ... THE PROBLEM: Sulfur dioxide is a major source of air pollution world wide, and a major contributor to the problem of acid rain.

SOME SOLUTIONS: 1) The technology exists to produce cleaner burning coal, but this process is very expensive. 2) Inorganic sulfur can be removed from coal by washing it, but this will not remove organic sulfur, and the process is also very expensive. 3) Coal gasification converts coal to a gas in order to remove the sulfur. The gas produced from the sulfur can then be used to augment supplies of natural gas. This process is not yet competitive enough. 4) Scrubbing removed the oxides from the gases in the smoke stacks, but is also an expensive producer. Looking at these solutions, it would be easy to conclude that there is no win win solution when it comes to sulfur emissions from coal.

However, in Germany they did find a solution that is win-win. AN INNOVATIVE SOLUTION: “ A German company in 1980 purchased coal-scrubbing technology and improved on it... rather than disposing of the calcium sulfite rich sludge the company further processes it to produce building materials such as sheet rock or wallboard, which are sold worldwide. Another innovative approach to removing sulfur has been taken at a large coal burning plant near Mannheim, Germany. The smoke from combustion is cooled, then treated with liquid ammonia.. the sulfur-contaminated smoke is cooled in a heat exchange process that allows the chemical reaction between the sulfur rich smoke and ammonia to take place... waste heat from the cooling towers is used to heat nearby buildings, and the plant sells the ammonium sulfate in a solid granular form to farmers to use as fertilizer. Thus, Germany, in response to tough pollution control regulations, has substantially reduced its sulfur dioxide emissions, and in the process it has boosted its economy. “.

Increasing recognition that the overall goals of environmental conservation and economic development are not conflicting but can be mutually reinforcing, has prompted calls for ‘ environmentally sustainable’ economic development. Although there are difficulties in defining sustainable development in an analytically rigorous way, there is still a need to evolve a concept of sustainability that both distinguishes it from other post-war meanings of development and is useful for practical analysis and policymaking.