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Articles

ENVIRONMENTAL DETERIORATION IN RURAL MEXICO: AN EXAMINATION OF THE CONCEPT

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Mexico, like many other countries worldwide, faces an environmental crisis of enormous proportions. While in its urban dimension environmental problems are more similar to those of developed countries, in rural areas they are analogous to those prevailing in developing countries. In rural areas, which are largely devoted to food production based on traditional methods, environmental concerns are mainly related to phenomena such as deforestation and soil erosion, and not to chemical pollution or ozone-layer depletion, which are the primary concerns of the broad public. The future food production in these regions and the possibility of improving the life quality of their inhabitants depend on our understanding of these kinds of problems, and our capacity to confront them.

An overview of the theoretical framework on environmental deterioration reveals a lack of definition of the concepts and terms related to this issue. Several terms, such as “desertification” and “fragmentation,” among others, are widely used by ecologists but are clearly not synonymous with environmental deterioration. A consequence of this vagueness is the lack of clear criteria to differentiate areas that are only moderately modified from those in which true deterioration has occurred. Also, unified methods to efficiently evaluate environmental deterioration in rural areas are lacking.

We briefly present a case study in which environmental deterioration was evaluated in La Montaña, an extremely poor and climatically and topographically heterogeneous rural region inhabited by indigenous people in southern Mexico. Three deterioration categories are recognized based on degree of human influence, proportion of vegetation cover, and soil erosion severity. Use of air photogrammetry supplemented with field surveys revealed that 13% of La Montaña is already *damaged* (i.e., lacking native vegetation and affected, perhaps irreversibly, by severe erosion), while 36% is *altered* (i.e., where native vegetation is substantially modified, but productive activities are still possible). In turn, almost three quarters of the land in the latter category is at high *risk* of becoming damaged. An analysis of the patterns of land-use changes around selected villages for the period 1979–1992 showed local annual deforestation rates ranging between 1 and 17%, depending upon climatic conditions.

Based on the conceptual review and the analysis of the case study, we suggest that environmental deterioration comprises at least three clearly distinct dimensions: the abiotic setting, the biological attributes, and the social characteristics of the process. Finally, we define environmental deterioration as any modification of the environment that implies a reduction or loss of its physical and biological qualities, caused by natural phenomena or human activities, ultimately representing a decrease in the availability of ecosystem goods and services to human populations.

The methods used to evaluate environmental deterioration at La Montaña allowed us to separate modifications that cause deterioration from those that do not. This investigation, carried out in a relatively short time and with a minimum financial investment, yielded a satisfactory assessment of the state of the environment at the regional and community scales, recognizing early indicators of deterioration. This approach may be particularly useful in rural regions that share many characteristics with La Montaña, such as critical environmental problems, extreme poverty, and insufficient background information about these issues.

Keywords: [ecosystem goods and services](#), [environmental alteration](#), [damage](#), [and risk](#), [environmental deterioration](#), [components of](#), [environmental deterioration](#), [analytical framework](#), [environmental deterioration in rural Mexico](#), [land degradation in developing countries](#), [land misuse](#), [chronic](#), [La Montaña region \(Guerrero\)](#), [Mexico](#), [social/economic factors in environmental degradation](#)

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