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# Soil degradation and land cover change in Latin America

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## Introduction

In the seminal work *Land Degradation and Society* by Blaikie and Brookfield (1986), the issue of land degradation was defined as a social problem: soil degradation, such as that caused by erosion or salinization, is not a problem until it affects society.

Historically, land has had a pivotal role in the conceptualization of production and productivity. Human labor interacts with nature (land) to produce food, fiber, and fodder; if land is degraded, more labor is required to produce the same quantities. That essential idea of productivity has evolved with the development of biotechnology and the use of fertilizers and machinery; however, much of the idea of productivity is based on fossil fuels and not on human labor. All of these new technologies seem to have increased the productivity of the land at an ever-increasing pace—yet the world has witnessed a dramatic increase in the Human Appropriation of Net Primary Production (HANPP), defined as the overall biomass produced on the Earth's surface through photosynthesis (Rojstaczer, Sterling, y Moore 2001; Vitousek et al. 1986). HANPP has doubled in the last century, and will probably reach 78% if biofuels become mainstream by 2050 (Krausmann et al. 2013). The demand for land, whether for carbon sequestration, timber, or biofuels, is already competing with the demand for food production worldwide.

Simultaneously, in the name of progress, governments have facilitated the creation of resource frontiers, using agriculture sustained by fossil-fuel inputs, such as fertilizers and pesticides. This reflects a narrow-minded framework oriented to agribusiness and global exports, in which deforestation and the agrarian frontier keep advancing over naturally-forested areas (Armesto et al. 2010). As demands on global land area increase and climate change intensifies, it is more important than