GROWTH AND THE ENVIRONMENT

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Summary

Knowledge of the historical trends in growth and the environment is useful for understanding and encouraging sustainable growth in the world. The environmental Kuznets curve helps us analyze growth patterns in different countries and over time. It is useful in environmental policy initiatives in all countries, but in developing countries in particular. However, the implications of the environmental Kuznets curve can be misconstrued and care needs to be taken not to assume that all environmental problems are transitional and can be taken care of once income levels increase. There are strong links between trade and the environment and we need to understand how these links work to be able to exploit fully this relationship to aid sustainable development.

1. Introduction

The issue of the relationship between economic development and environmental degradation is not new. In the last decades of the twentieth century, however, this debate was renewed due to growing concerns about the deteriorating quality of air and water, natural resource depletion, and the contraction of biodiversity.

This article starts by recording the past effects of accelerated economic development on environmental stability. The next two sections discuss the environmental Kuznets curve (EKC) hypothesis and how it throws light on the relationship between the environment and growth and development. The implications of this hypothesis are analyzed and its predictive power critically studied. Many factors could complicate the links between economic development and environmental conditions. One is knowing exactly what is

being measured. In this context, the choice of meaningful indicators for both the development level and environmental degradation raises several issues. Section 4 focuses on what is often described as the engine of growth—international trade—and explores the link between trade and the environment. Recent research in this area has put forth arguments for and against this link. Section 5 describes the effect of environmental labeling on improving environmental quality, and the final section studies the relationship between international debt and the environment.

2. A Brief History of the Relationship between Growth and the Environment

At the beginning of human civilization, the environment was an important factor in influencing growth patterns. There is significant evidence that the locations of human settlements were determined by the availability of natural resources, particularly water. The Indus Valley civilization, for example, flourished in Southwest Asia near the Indus river system and Egyptian civilization was established along the Nile River. Some of these regions were later abandoned, when over time they became desert. The Mayan civilization flourished around the third and the fourth centuries C.E. and collapsed during the tenth century, a period that saw a lot of climate change and temperature rise in that region. However, more recently the impact of human beings on environmental and ecological stability has come to be seen as a more serious problem. Thomas Malthus was perhaps the first to discuss the possibility of excessive resource shortages as human population increased exponentially. He argued in 1798 that the productivity of labor would grow at a slower rate than the population, because the increased population would produce food using a fixed amount of land, which implied a diminishing marginal product of labor. That is, population would grow until the lack of food kept the population from growing any further. Each individual would always be at the brink of starvation or at a standard of living known as the subsistence level. This hypothesis earned economics the nickname of "the dismal science," because of the dismal outcome it predicted for humankind. Fortunately, Malthus's predictions have not come true. The most important reason for this is that Malthus considered only land and labor as the two inputs in his study. He ignored energy, capital, and human knowledge as potential inputs in the production function, the addition of which could increase the returns to labor. Many other scholars, such as Karl Marx, John Stuart Mill, and Alfred Marshall, contributed to this debate over the years.

In 1962, Rachel Carson's book *Silent Spring* initiated the modern era of awareness of environmental issues in developed countries. Carson highlighted the significant risks posed by some pesticides (especially DDT) and the need for environmental alertness. The next few years witnessed a resurgence of the Malthusians (the Neo-Malthusians). D. Meadows, D.L. Meadows, J. Randers, and W.W. Behrens, III, constructed a computer model using five variables (population, food, industrialization, nonrenewable resources, and pollution) to study whether there might be limits to the growth of the earth's resources. All the future projections generated by this model predicted the collapse of growth. All these models gave little recognition to the role of technical progress in avoiding this predicament and were thus not very good at predicting future growth patterns. However, this body of research did serve one very important purpose: it increased awareness of potential dangers of inefficient natural resource utilization. It has since been argued that, given a reasonably free market, technology can generally be

depended upon to find a substitute for most scarce material resources. However, there are no possible technological substitutes for some elements of the environment, such as climatic stability, stratospheric ozone, and biodiversity. Degradation of most of these is irreversible; therefore, technological optimism would be misguided for these components of the environment.

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Biographical Sketches

Dr. Lata Gangadharan completed her Ph.D. in 1997 at the University of Southern California, Los Angeles. Since then she has been employed at the Department of Economics, University of Melbourne, where she is a senior lecturer. Her main research areas are environmental economics and experimental economics. She has published many papers in these areas in referred journals. Her work is recognized internationally. She often serves as an expert on committees involved with environmental issues. She was invited to present a paper in a workshop on global warming, organized by UNESCO in Milan. She is currently involved in designing markets in pollution in the state of Victoria in Australia..

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