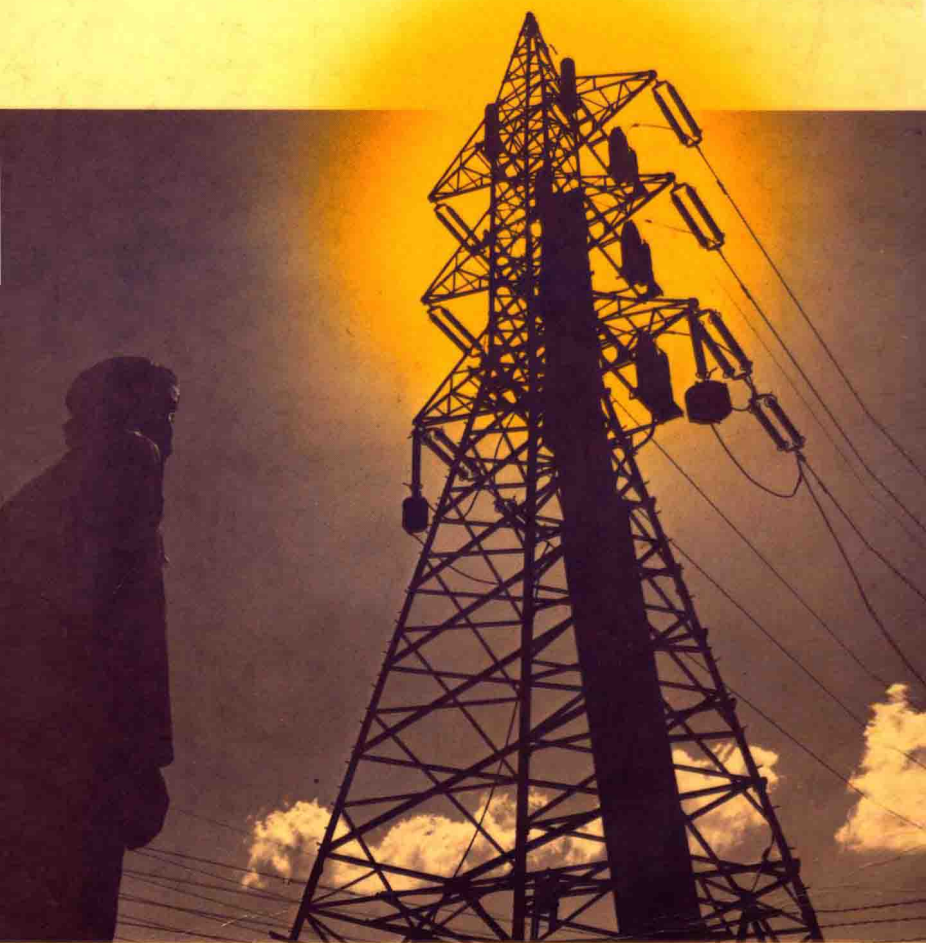


PETER BARTELMUS

Environment and Development



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Preface

The Earth's finite natural resources have been exploited for centuries. Only over the past two decades, however, has public attention been caught by serious phenomena of resource depletion and scarcity. Widespread concern about environmental degradation has also been expressed in conjunction with conspicuous pollution incidents in the 1960s. Zero growth of the economy and the population was then postulated in industrialized countries to avoid the disastrous transgression of the physical "outer limits" of the planet. Developing countries remained only peripherally interested, considering environmental concerns to be marginal products of high-level economic growth. Today, environmental problems are generally seen to stem both from economic growth and from activities induced by an actual lack of development. The term "pollution of poverty" has been widely used in reference to the recent concern with the environment in developing countries.

International organizations have encouraged the opening of a dialogue on the environment between economically developed and developing countries. However, various industrialized countries seem to have dissociated themselves from their initial position of environmental heralds in a reassessment of priorities relative to economic and environmental issues. Developing nations on the other hand continue to be concerned with the environment, particularly with respect to their resource base and life-support systems.

Despite the continuing efforts of international organizations to promote environmental issues, no generally recognized model of the relationships between environment and development is available. Some international

agreement on development objectives and policy measures, which include environmental aspects, has been reached through the adoption of the International Development Strategy for the Third United Nations Development Decade. However, the outlook for the implementation of this strategy is bleak. The failure, so far, to initiate a round of global negotiations for the implementation of a New International Economic Order does not augur well for the success of the Third Development Decade.

At the national level, development policies frequently follow a muddle-through approach, as environmental, social and sometimes even economic objectives and priorities are neglected or affected by political pressures rather than substantive knowledge. To some extent this can be explained by the resistance of dominant classes in countries to implementing strategies that might impair their privileges. But there is also confusion about the appropriate style of development because of discrepancies between values and cultures in developing countries and international development concepts and strategies that are largely based on the life-styles and technologies of northern industrialized countries. The need for alternative development has been reiterated, but opinions differ widely as to its contents and implementation.

This book focuses therefore on exploring the environment-development problematique at the national and subnational levels. It reviews what is known about environmental problems in developing countries and what can be done by the countries themselves to tackle them. The text is organized into four major themes: concepts and definitions, assessment of environmental problems, planning for solving these problems, and plan implementation.

In Chapter 1, the basic concepts of environment and development are discussed. There follows a description of the intrinsic relationships between environment and development. Some of the more extreme views of the environment are highlighted, and the efforts of international organizations to develop a balanced view of environment

and development are outlined. The main environmental concerns of developing countries are presented in Chapter 2. It is shown that while the industrialized, agrarian, market and non-market economies all face similar environmental problems, the scale and intensity of these problems, as well as the priorities assigned to environmental, social and economic concerns, vary considerably among countries.

Starting from a basic framework of human interactions with ecosystems, the concept of ecodevelopment is introduced in the third chapter. Ecodevelopment is set forth as a basic approach to the integration of environment with development planning. Various models of ecodevelopment, ecostrategies and ecotechniques are presented. The application of different planning concepts and strategies to the solution of environmental problems is discussed in Chapter 4. Following a review of the reasons for typical plan failures, possibilities of injecting environmental criteria into the centralized planning system are highlighted. As an alternative to central planning, ecodevelopment is advocated, and the ways and means of implementing this approach at local levels are outlined.

Peter Bartelmus

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Abbreviations

CBA	cost-benefit analysis
ENDA	Environmental Development Action in the Third World
EIA	environmental impact assessment
FAO	Food and Agriculture Organization of the United Nations
GDP	gross domestic product
GEMS	Global Environment Monitoring System
GNP	gross national product
ILO	International Labor Organization
IRPTC	International Register of Potentially Toxic Chemicals
IUCN	International Union for Conservation of Nature and Natural Resources
LDC	least-developed countries
MAB	Programme on Man and the Biosphere
NIC	newly industrialized countries
OAS	Organization of American States
OECD	Organisation for Economic Co-operation and Development
SCOPE	Scientific Committee on Problems of the Environment (of the International Council of Scientific Unions)
UNCTAD	United Nations Conference on Trade and Development
UN/ECE	United Nations/Economic Commission for Europe
UN/ESCAP	United Nations/Economic and Social Commission for Asia and the Pacific
UNEP	United Nations Environment Programme

UNESCO	United Nations Educational, Scientific and Cultural Organization
UNIDO	United Nations Industrial Development Organization
WHO	World Health Organization
WMO	World Meteorological Organization

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1 *Concepts: environment and development*

Scope and components of the human environment

Ecologists have generally defined the *environment* as the external conditions and influences affecting the life and development of organisms. From this basic concept a definition of the *human environment* can be derived by replacing “organisms” by “man” in the above definition. Further clarification of the nature of human conditions and influences is needed.

Taking a global look at the whole of mankind, regional variations of habitat may be put aside for a description of the major physical characteristics of our planet. The *lithosphere* includes the Earth's solid crust down to an average depth of 60 km into the interior of the globe. The *hydrosphere* is made up by the oceans, lakes, rivers, icecaps and other water bodies. The *atmosphere* comprises the gaseous envelope of the planet (Fig. 1.1). The *biosphere* is the part of the physical world where life can exist, and includes the living organisms themselves. It extends into all other “spheres” and is usually broken down into biotic and abiotic components. Living organisms and non-living parts depend upon each other and interact in complex ways which are studied by ecologists with the fundamental ecosystem approach. Continuous energy flows to and from the planet are truly vital for all processes within the biosphere; they open and link our environment, beyond the physical world of the atmosphere, hydrosphere and lithosphere, to the far-off Sun.

Moving from the global view of “spaceship Earth” (Boulding 1966) to a regional, national or local level, one is led to the consideration of fellow human beings as an

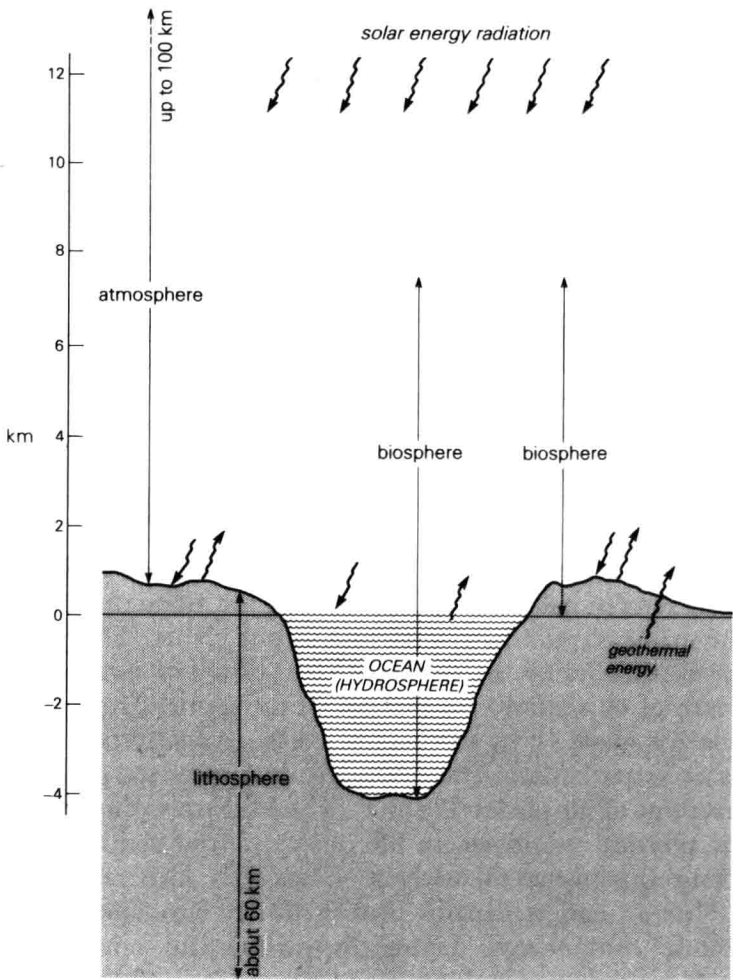


Figure 1.1 The physical world.

additional social component of the environment. Social groups such as nations, tribes and families interact in numerous ways, both aggressive and cooperative, and cause distinctive impacts, both productive and destructive, on the biophysical environment. In particular, they have created an artificial, man-made environment which affects all other environmental components. The environmental

problem exists within these inter-relationships and inter-dependencies.

What is development?

Development is generally accepted to be a process that attempts to improve the living conditions of people. Most also agree that the improvement of living conditions relates to non-material wants as well as to physical requirements. Development goals that call for the increase of human welfare or the improvement of the quality of life reflect this agreement.

Quantifiable definitions of these concepts are needed for measuring progress toward development goals. A typical starting point has been to break down the overall objective of human welfare into sub-objectives or targets. The difficulties involved are described by Bartelmus (1980, p. 40 *et seq.*), who offers a tentative list of general human objectives, condensed from a variety of publicly proclaimed social objectives. The list of objectives includes affection, recreation and entertainment, education, human freedoms (security), shelter, esthetic and cultural values, political equity (participation and social opportunities), health, physiological needs and future quality of life. Subjective value judgements are involved in such a list, and any further breakdown would be even more arbitrary as human preferences vary significantly among individuals and through time and space.

Generally applicable policies and strategies to meet such objectives are as difficult to identify as the objectives themselves. Such policies must weigh conflicting goals and values, within varying socioeconomic conditions. In most developing nations, low levels of living and productivity are accompanied by high levels of population growth, unemployment, international dependence and a predominantly agrarian base to the economy. Based on these common factors, some international agreement on