

Module 11

Ecological Degradation and Environmental Pollution

Lecture 37: Population and Sustainable Development

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INTRODUCTION

Population has very close connection with environment. The relationship between population and environment is, however, reciprocal: both population and environment affect each other. Yet it was in the second half of the twentieth century that the relationship between population and environment got serious attention of economists, sociologists and demographers who began exploring various linkages between population and environment. Earlier, population was linked more with economic development than with environment. In sociology the works on environment follow mostly one of the two lines of thought:

- Sociology of environment; and
- Environmental sociology

Sociologists of environment examine how social structure affects the environment, i.e., resource use, resource depletion, environmental pollution, climate change and access to various community resources. They also studied environmental movements broadly covered under the aegis of neo-social movements, by focusing on local and global issues raised by them and drawing attention to participation of all social classes in the movements, organizational structure, motivation, successes and impact. On the other hand environmental sociologists took a neo-Durkheimian view of society and maintained that among other things society is shaped by environment. This module attempts to expose students to certain basic concepts in environment studies in sociology such as the concept of sustainable development, population-environment link and environmental movements.

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COMPLEX LINKAGES

The two approaches mentioned above examine the same relationship but in the two the dependent and independent variable are interchanged. There are also some who do not accept separation between man and nature as logical categories. In their view, over centuries human ingenuity has constantly been working on nature, modifying it, assigning new meanings to nature, assigning new meanings to humanness itself, and redefining the relationship between man and nature. In the age of genetic engineering, use of techniques of [molecular cloning](#) and [transformation](#) to alter the structure and characteristics of genes directly how one can define the term natural? To quote:

We inhabit a triangular world of society (including human biological existence), cultivated nature and non-cultivated nature. Interactions between them are also triangular. Impacts occur (in either direction) between non-cultivated nature and cultivated nature, between society (pollution, construction, irrigation) and non-cultivated nature (earthquakes, viruses and so on) and between human biological and social existence and both cultivated and non-cultivated nature (Harvey et al., 2002,1).

Which view among the two is more conducive to study population-environment link?

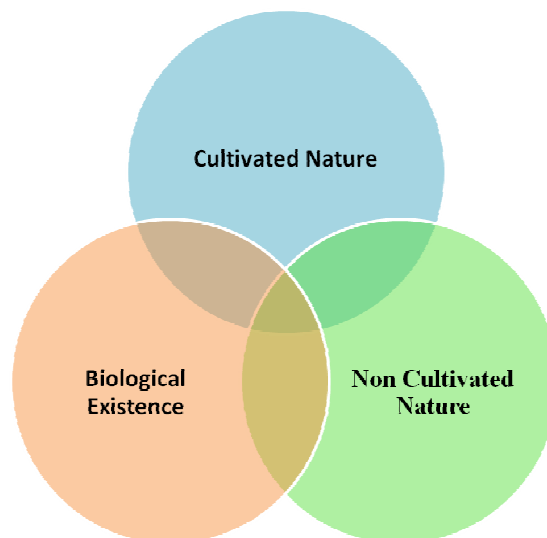


FIGURE 11.1: TRIANGULAR WORLD OF SOCIETY AND NATURE

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At the empirical level linking population and environment is quite problematic because both population and environment refer to vectors of different conditions and complex processes. Population variables refer to size, growth rate, composition, structure, fertility, mortality, migration, etc. Environment factors refer to quality of air, water, soil, sound, minerals, agricultural and forest produce, and various types of pollutants with ill defined levels of permissible toxicity. Obviously, the effect of size of population on proximate variables of development may quantitatively and qualitatively differ from effect of aging on the same. Similarly the effect of climatic change on birth rate will be different from its effect on migration and occupational mobility.

In this lecture we focus more on the connection between population processes and sustainable development. It may be noted that the concept of sustainable development combines the concept of development as well as environmental quality.

WHAT IS SUSTAINABLE DEVELOPMENT?

The idea of sustainable development is simple. All of us want development. There is no doubt about that. Yet, we also want that development should be sustained and the fruits of development should be available to all including the most vulnerable sections of society and the next generations. Development with benefits confined to some and to members of the present generation only may be called development but not sustainable development. In this framework, development need to be re-examined in the framework of theories of sustainable development, and they have to go beyond the effect of population growth on savings, capital and growth rate of income.

Yet the term social development has been used in multivocal sense having multiple meanings. Sustainability has been conceptualized in several ways. The dictionary meaning of the word “sustainable” is that it is a thing that can be kept up, maintained or prolonged. Thus sustainable development may be defined as that process of development which can last. The State of World Population 1992, the report prepared by United Nations Population Fund quotes the following definitions of sustainable development:

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- (a) Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.... Living standards that go beyond the basic minimum are sustainable only if consumption standards everywhere have regard for long-term sustainability (Brundtland Commission, 1987).
- (b) Sustainable development.... involves providing a bequest to the next generation which is at least equal to that inherited by the current generation (*Blueprint for a Green Economy*, 1989).
- (c) Development that distributes the benefits of economic progress more equitably, protects both local and global environments for future generations, and truly improves the quality of life (in *Our Own Agenda*, by Inter-American Development Bank, 1990).
- (d) Sustainable development means improving the quality of human life while living within the carrying capacity of supporting ecosystems. A “sustainable economy” maintains its natural resource base. It can continue to develop by adapting and through improvements in knowledge, organization, technical efficiency, and wisdom (in *Caring for the Earth*, IUCN and WWF, 1991).

Beginning with the famous work of Meadows and others sponsored by the Club of Rome in 1972, entitled *The Limits to Growth*, among intellectuals and planners a feeling grew that the ongoing developmental processes are limited by their own results, and, therefore, the economic growth cannot be sustained for long. Before this, Forrester had argued how factors such as crowding, pollution, food supply, and natural resources can not only bring the exponential population growth to halt but they can also lead to sudden and tragic collapse of population. This provided support to Malthusian credence and created the idea that development not accompanied by population control would threaten human survival in the long-run, both in the developed and developing countries. At this point natural resources (later called natural capital) rather than capital became central to environmental discourse. Studies established that development is neither a universal nor an irreversible process.

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We need a type of development that does not lead to depletion of renewable resources, such as water and soil, forests and fisheries, and non-renewable resources, such as minerals.

This raised a number of questions about:

- Values regarding desired levels and structure of development
- Welfare of future generations vs. welfare of present generation
- Relationship between man and environment
- Role and responsibility of science and technology
- Rising aspirations for development and modernization in the less developed countries
- Role of market in environmental degradation
- Notions of equality and justice

For development to be sustainable there are only three options: (a) a check on the scale of living; (b) changeover from manufacturing to service as service sector consumes less natural resources than manufacturing; and (c) new technological developments to conserve resources, which raise their productivity and reduce pollution. Yet, some economists feel that the case of limits to growth is overstated and as such the possibility of extinction is remote.

DIVERGENT VIEWS

There are very **divergent views** on environment, ranging from the view that development has not caused any threatening environment problem for humanity to the view that there is a need for urgent action. To quote Davis (1990) whose ideas reflect the first view:

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Thus the grizzly truth may turn out to be that limits are more prophetic than its detractors and even some of its defenders thought possible. In fact during the last three decades several basic developments have occurred that together amount to a revolution in environmental concerns. First, the sheer number of discoveries of environmental problems has increased precipitously; second, the long-term seriousness of the problems has been increasingly recognized as more of the consequences of growth are felt; third many problems formerly thought to be local in character are in fact global or near-global in scope; fourth, the involvement of science in understanding the causes of environmental change has increased rapidly; and fifth, the international scope of environmental damages has led inevitably to strong demands for conservationist policies.

The fact is that an increasing number of economists are now preoccupied with environmental matters. Keyfitz (1991) stressed that now we have to recognize the ozone layer, carbon dioxide in the atmosphere, extinction of species, waste, and desertification. At high levels of income and technological development the effects of changes in economic and demographic variables on the ecosphere are great and cannot be neglected. Like Davis, Keyfitz (1990) articulates that the world is changing. “Communication, the conquest of space, computing, the new cellular biology, atomic physics, were indeed changing the world at exactly the time when economists discovered human capital”. Yet, he differs from Davis on accounts of five factors: (a) non-linearity and non-substitutability of resources availability; (b) capital setting limits of economic progress; (c) structural bottlenecks in employment generation; (d) greater recognition of the fact that economy is set within the ecology; and (e) awareness of warming of the bio-sphere.

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DIFFERENCES IN PERCEPTION BETWEEN DEVELOPED AND DEVELOPING COUNTRIES

There are serious **differences in perception of sustainable development between developed and developing countries**. Developing countries want to catch up with the developed countries. They too want high scale of living. They suspect that the very talk of environmental problems is essentially an instrument of debarring them from raising their standards to the levels of developed countries. Developing countries like India feel that poverty rather than over development is the cause of environmental problems in the less developed countries.

To quote:

With the realization that poverty and the state of underdevelopment led to many of the environmental problems that confronted the nation, came the understanding that it was more rapid development that was the best approach. This development has to benefit people (and particularly the poor) by providing for their basic human needs and rising aspirations. Thus, many of the developmental programmes and, could indeed be termed as environmental management programmes (Govt. of India, 1985).

It has to be understood clearly that sustainable development is not a strategy of development. It is a goal or a vision. To be of practical utility it has to be operationalized in specific contexts. It sensitizes us to the fact that the rich and the poor, the present and the future, cities and countryside, industry and agriculture, and man and nature are inseparable and they are linked with each other through complex socio-economic, cultural, biological and political chains. The concept of sustainable development stresses that the long-run welfare of a community depends heavily on the quality of surrounding environment and welfare of the other communities.

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STRATEGIES

Now the issue is: what are all the strategies possible if a country wants to go for sustainable development? The World Bank (1992) suggested a threefold strategy for meeting the challenge of sustainable development. They are:

- (a) Build on the positive links. Growth of income promotes efficient use of resources, technology transfer, market and investment in environment improvement. Poverty removal reduces population growth and provides resources and knowledge to enable the poor to take a long range view of development
- (b) Break the negative links. Incentives, environment policies and institutions building are necessary to guarantee sustainability. Mere improvement in income and capacity to solve environment problems are not sufficient.
- (c) Clarify and manage the uncertain links. Knowledge generation is important to know new relationship between man and environment and effective management of resources.

The above description of strategies is useful but is abstract. It has to be operationalized in terms of indicators and processes.