

SOCIAL ASPECTS OF ENVIRONMENTAL AND ECOLOGICAL SUSTAINABLE DEVELOPMENT

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Keywords: Social aspects, sustainable development, population pressure, poverty, education, national policy, legislation, people's consumption patterns, public awareness, participation

Contents

1. Introduction
 2. Population Pressure
 - 2.1. Case Study: China's Family Planning
 3. Poverty
 - 3.1. Case Study: Poverty and Deforestation
 4. Education
 - 4.1. Case Study: Green Schools Plan
 5. National Policy and Legislation
 6. People's Consumption Patterns
 7. Public Awareness and Participation
 8. Conclusions
- Glossary
Bibliography
Biographical Sketches

Summary

Sustainable development provides long-term economic, social, and environmental benefits, having regard to the needs of living and future generations. Social aspects of environmental and ecological sustainable development are now being recognized. The implementation of sustainable development policies acts to advance society.

On the other hand, many social aspects also affect the realization of sustainable development. Therefore, this article discusses the relationship between social aspects and sustainable development through six issues: population pressure, poverty, education, national policy and legislation, people's consumption patterns, and public awareness and participation. None of these six social factors is isolated. Finally, based on the discussion, the article suggests some guiding principles for environmental and ecological sustainable development.

1. Introduction

Sustainable development provides long-term economic, social, and environmental benefits, having regard to the needs of living and future generations. Since the concept was put forward in 1980, there have been many different definitions of it, most holding that sustainable development is equity between different generations and within the same generation. The World Commission on Environment and Development (WCED) defines sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” The equity between different generations means that not only are the current generation’s needs satisfied, but also the potential of our descendants’ development should be preserved. Furthermore, sustainable development should also preserve equity within the same generation, which implies that people all over the world have the same right to live their life and develop by themselves. As research progresses, the social aspects of environmental and ecological sustainable development are being recognized. On the one hand, the implementation of sustainable development policies acts to advance society. On the other hand, many social factors also affect the realization of sustainable development. Therefore, it is necessary to study the relationship between social aspects and sustainable development.

2. Population Pressure

Area	1900	1950	1985	2000	2025	2100
Developing countries						
Africa	133	224	555	872	1617	2591
Asia ^a	867	1292	2697	3419	4403	4919
Latin America	70	165	405	546	779	1238
Subtotal	1070	1681	3657	4837	6799	8748
Developed countries						
Europe, Japan, Australia, Former Soviet Union	478	669	917	987	1062	1055
North America	82	166	264	297	345	382
Subtotal	560	835	1181	1284	1407	1437
Total	1630	2516	4838	6121	8206	10185

^a Japan is not included

Source: D.W. Pearce and J.J. Warford, *World Without End: Economics, Environment and Sustainable Development* (New York: Oxford University Press, 1993).

Table 1. Population growth, 1900–2100 (millions)
(Source: D.W. Pearce and J.J. Warford, *World Without End: Economics, Environment and Sustainable Development* (New York: Oxford University Press, 1993))

Since World War II, the world’s population has increased greatly, which places enormous pressure on sustainable development. By the end of the twentieth century, the world

population was approaching 6 billion (see Table 1). It is not easy to calculate the sustainable population, but in many areas numbers are very high, available resources are inadequate to meet the needs of the population, and the inhabitants suffer from poverty, malnutrition, and disease. Some experts think that the link between population and resource degradation is not so straightforward. There are examples of dense populations with relatively low degrees of erosion, and less densely populated areas where there are fewer incentives for resource protection and widespread degradation. However, it is certain that the increasing world population causes many problems, especially in some developing countries.

To meet the basic living needs of increasing populations, more natural resources are consumed, which causes the existing environment to deteriorate. Demographic growth affects environmental conditions in rural and in urban areas. Population growth in rural areas tends to force people into exploiting more fragile natural ecosystems; increase the demand for arable land and wood for fuel, often resulting in deforestation; and shorten fallow periods, thereby reducing land productivity. Similarly, the inability to provide for rapid urban population growth often results in inadequate urban waste management, air and water pollution, shortage of clean water, land degradation, and congestion. Overpopulation is at the root of virtually all environmental problems, including pollution and resource depletion, and many social and economic problems.

The most significant pressure exerted by populations on natural resources is the ever-increasing demand for food, followed by the demand of both rural and urban poor for fuel wood. To feed the rapidly increasing population, people have to reclaim more land, and many forests are felled.

An important concept in ecology is the idea of carrying capacity. Carrying capacity is the maximum number of individuals a habitat can support. In any finite system, there is a limited availability of food, water, nesting spacing, and other essentials that limits that system's carrying capacity. When a population exceeds its environment's carrying capacity, shortages of nutrients and other necessities usually weaken individuals, reduce successful reproduction, and raise death rates from disease until the population once again falls below its maximum size. No one knows exactly what will happen to the world's population. The only point on which the experts approach agreement is that the world's population cannot grow indefinitely. Some countries, but only the most forward-thinking and proactive, will probably make a smooth transition to a stable state; others may experience periodic crashes caused by epidemics in crowded urban populations; others may fall to low population levels because of continued starvation and disease.

To cope with the heavy pressure, some countries, such as China, India, and Thailand (the world's first family planning program began in India in 1952, when its population was nearly 400 million) have taken measures to reverse the trend of rapid population increase. The human population has skyrocketed primarily because of a worldwide lowering of death rates while birth rates have remained high. Because raising the death rate is not ethically acceptable, lowering the birth rate is the focus of most efforts to slow population growth. So birth control is widely applied, and this has clearly brought down the birth rate.

2.1. Case Study: China's Family Planning

China, the world's most populous country, has made impressive efforts to feed its people and bring its population growth under control since 1970. China's leaders realized their country's overpopulation problem in the 1960s and family planning was established as the country's basic policy. "It is better to have one child only" become a proverb in China. Between 1972 and 1994 China achieved a remarkable drop in its crude birth rate, from 32 to 18 per 1000 people, and its total fertility rate dropped from 5.7 to 2.0 children per woman. Since 1985 its infant mortality has been almost one-half of the rate in India. Life expectancy in China is 70 years, which is 13 years higher than in India. Despite these achievements, with the world's largest population (about 1.2 billion) and a growth rate of 1.1%, China had about 14 million more mouths to feed in 1994. It is clear, however, that family planning has been effective (see Table 2).

Year	Birth rate (‰)	Death rate (‰)	Natural growth rate (‰)
1952	37.00	17.99	20.00
1965	37.88	9.50	28.38
1970	33.43	7.60	25.83
1975	23.01	7.32	15.69
1980	18.21	6.34	11.87
1985	21.04	6.78	14.26
1990	21.06	6.67	14.39
1992	18.24	6.64	11.60
1994	17.70	6.49	11.21
1996	16.98	6.56	10.42

Source: *National Statistical Almanac of China* (1997).

Table 2. Natural growth rate of the population in China, 1952–1996
(Source: *National Statistical Almanac of China* (1997))

3. Poverty

Poverty is usually defined as the inability to meet one's basic economic needs for clean air and water, food, shelter, and health care. Poverty is both a cause and a consequence of environmental degradation. The poor are ordinarily the first to suffer the consequences of environmental degradation, and poverty on its own can have a significant negative impact on the environment. When other alternatives break down, poor people are often forced to use land and water in ways that threaten the productivity of these vital resources in the future.

For example, in India as in many other low-income countries, people living at subsistence levels have encroached on forests, wetlands, mangrove zones, and coral reefs causing large-scale deforestation, erosion, and loss of terrestrial and marine biodiversity. Likewise, in many developing nations the urban poor lack the financial resources to compete for housing in safe locations or for land where basic services are established. As a result, they are frequently forced to establish illegal settlements on hazard-prone or environmentally sensitive land poorly suited to residential uses.

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Biographical Sketches

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