

RURAL DEVELOPMENT: PARTICIPATION AND DIVERSITY FOR SUSTAINABILITY

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Summary

This article considers rural development especially from the point of view of sustainable development in the developing countries. A brief discussion on the interlinkages between rural and urban sustainability is presented at the outset. The paper then briefly reviews the global population trends that put pressure on use of land, water and other resources.

A discussion on rural poverty and socio-economic polarization leads to the recognition of the need for broad-based participation. The article then reviews the evidence concerning major environmental issues affecting the sustainability of rural production systems, namely land conversion and problems related to availability and use of water.

The need to move towards a more sustainable agriculture is discussed at some length. The future must combine advanced biotechnology tools with a holistic view that involves all the stakeholders in a constructive manner. A case is made for broad-based participation and appreciating the diversity that is inherent in locally-evolved production systems.

1. Introduction

1.1. Background

As half of humanity will soon be living in cities, the attention has turned to urban development issues. Yet, sustainable rural development will continue to be essential for human welfare in the future. Especially in the developing continents of the world, the majority of the people still reside in rural areas and depend on agriculture for their livelihoods. Rural areas are in most countries lagging behind cities in national development. Poverty is more widespread and social indicators, including health and education, generally show less favorably than in cities. The demographic profiles are skewed. In most industrialized countries, rural areas are experiencing depopulation and ageing of the population. In the developing countries, rural birth rates are still often high resulting in fast population growth. However, due to lack of opportunities and the lure of the modern sector, many working-age people migrate to urban areas leaving the old and the very young in the countryside. More often than not, it is the women who are left to farm the land.

Rural areas will continue to be the main source of food to humankind. In the present circumstances, fewer farmers will need to provide food for more urban dwellers. In the industrialized countries of the North this usually means highly mechanized input-intensive commercial agriculture. In the South, however, peasant farming still dominates and is characterized by low technologies and external inputs. As marketing and transportation systems are also frequently inadequate, this has led to increasing dependency in the South on imported food and further deprivation of the rural areas. Increasingly, with the encroachment of urban areas, markets are penetrating to remote areas everywhere and commercialization leads to rapid changes in rural lifestyles and production patterns. These changes can be either positive or negative, but they have importance both to food security, environmental sustainability, and social, economic and cultural aspects.

Agriculture requires land that is increasingly scarce, as populations grow and land is converted into other uses. Therefore, there is need to produce more from a smaller amount of land in order to feed the population. New agricultural practices and grain varieties have been essential in avoiding large-scale food shortages globally. At the same time, they are not without risks. It has often been claimed that the so-called “Green Revolution” has increased polarization between the rich and the poor farmers. Environmental problems are also frequently associated with the intensification of agriculture.

Rural areas face the difficulty of reconciling development with environmental conservation. The largest part of, for example, biological diversity can be found in rural areas. International attention is usually directed towards protected ecosystems, such as biosphere reserves and national parks. What is often forgotten is that the protected areas form only a very small area compared with those lands that are in use by people. It is these managed ecosystems, including agricultural lands, which contain the most part of biological diversity in need of protection. Furthermore, the protected areas often

encroach on the territories of rural inhabitants and threaten the sustainability of their livelihoods. Ethnic minorities and indigenous peoples are often the most vulnerable.

1.2. Aims and Structure

This article considers rural development especially from the point of view of sustainable development. Emphasis is given to the situation in the developing countries. First, a brief discussion on the interlinkages between rural and urban sustainability is presented. The paper then reviews the global population patterns and trends that put pressure on use of land, water and other resources. Population growth also leads to increased demand for food, which has a direct bearing on agricultural production.

A discussion on rural poverty and socio-economic polarization leads to the recognition of the need for broad-based participation. While economic growth in rural areas is a necessary precondition for poverty reduction, it is by itself not sufficient. The article then reviews the evidence concerning major environmental issues affecting the sustainability of rural production systems, namely land conversion and problems related to the availability and use of water. It is recognized that the people-land relationships are not uniform, but the outcomes of intensification vary from place to place. Agriculture is the leading consumer of freshwater, but excessive water use has negative impacts on the environment.

The need to move towards a more sustainable agriculture is discussed at some length. Agriculture remains the backbone of the rural economy although many rural inhabitants today engage increasingly in non-farm activities. Food production must be significantly increased to cater for the demands caused by the increasing human population, changing consumption patterns, and the persistent malnutrition, especially in the developing countries. However, traditional ways of increasing agricultural production by clearing new land or by intensifying land-use by additional irrigation and chemical inputs is no longer feasible. Furthermore, the environmental and human health consequences are too high. There is a need to find new ways to enhance food production in a sustainable manner. The future must combine advanced biotechnology tools with a holistic view that involves all the stakeholders in a constructive manner. A case is made for broad-based participation and appreciating the diversity that is inherent in locally-evolved production systems. In the final section of the article, an innovative international collaborative project involving farmers and local communities in Africa, Asia and Latin America is described.

The statistics used in this article are normally the latest available from the United Nations and the World Bank. While these may be the most reliable ones available, it is always necessary to exercise caution in assessing the statistical information. The United Nations statistics are usually based on the information provided by the countries concerned or acquired through specific surveys carried out. There is always a margin of error and differing definitions from country to country may cause a certain degree of incomparability. Nevertheless, the statistics included in this article are intended to paint the broad picture and outline the main trends and directions. For this purpose, the statistics are sufficiently reliable.

2. Linkages between Rural and Urban Sustainability

Rural and urban are closely intertwined on many levels. Rural areas provide food for the urban centers (although, especially in many tropical cities, home gardens provide an important additional source of food security to, in particular, lower income urban dwellers). The health of the agricultural production base is, thus, very important also for urban development.

Urban expansion, however, often threatens the sustainability of the surrounding rural areas through sprawl that transforms land from agriculture to other uses, including housing, transportation infrastructure, commercial and industrial uses. Urban sprawl often follows main transportation arteries resulting in star-shaped urban development. This phenomenon is very widespread in, for example, the rapidly developing countries of Southeast Asia. In Indonesia, the term *desakota* describes this extensive sprawl, which obscures the distinction between rural and urban. Most large cities are linked to each other through urbanized corridors along the main roads.

Apart from this land transformation, urban sprawl threatens rural sustainability in other ways, notably pollution, which affects air, water and soil. Agriculture that is situated along highways receives pollutants from motor vehicles. Many of these, such as lead and cadmium, are heavy metals that are extremely harmful to human health. Similarly, both surface and groundwater face pollution from urban and industrial sources, which may threaten the water supply. In addition to water quality, increasing water demand for industry, energy and urban uses may lead to competition over the limited resource between these sectors and agriculture.

The other side of the coin is how sustainable development—or lack of it—in the countryside affects the development in the urban centers. In the developing countries, rural-urban migration continues to be high with the resultant unplanned urban growth and attendant social, economic and environmental problems. Much of this migration is due to the (perceived) economic opportunities in the cities as compared with the surrounding countryside. Preventing degradation and promoting sustainable development in the rural areas can thus curb the need to migrate to cities. This, however, requires that there are sufficient economic opportunities in the rural areas, both in and outside of agriculture that can allow for people to escape poverty and provide an adequate standard of living. Rural environmental sustainability is also an important part of this equation. However, the linkages are more complex than frequently portrayed.

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Biographical Sketch

Dr. Juha I. Uitto is the Senior Monitoring and Evaluation Coordinator for Global Environment Facility (GEF) at the United Nations Development Programme (UNDP) in New York, USA. He is also a Councilor of the American Geographical Society (AGS), and past Board Director of the International Water Resources Association (IWRA) and the World Seismic Safety Initiative (WSSI). Prior to joining UNDP in 2002, he worked with the International Fund for Agricultural Development (IFAD) (1984-1987), Scandinavian Institute of African Studies (1988-1989), United Nations University (UNU) (1990-1999) and GEF (1999-2002). Dr. Uitto specializes in project and program management, monitoring and evaluation in the fields of environment and sustainable development. He has research and project experience in over twenty countries in Asia, Africa, Latin America and the Middle East. Dr. Uitto is the author and/or editor of twelve books and monographs, including 'Water Wars? Geographical Perspectives' (a special issue of *The Geographical Journal*, 2002; with Aaron Wolf), *Sustainable Development of the Ganges-Brahmaputra-Meghna Basins* (UNU Press, 2001; with Asit Biswas), *Water for Urban Areas: Challenges and Prospects* (UNU Press, 2000; with Asit Biswas), and *The Fragile Tropics of Latin America: Sustainable Management of Changing Environments* (UNU Press, 1995; with Toshie Nishizawa). He has published some twenty articles in peer-reviewed journals, such as *Applied Geography*, *Asia Pacific Viewpoint*, *Environmental Hazards*, *The Geographical Journal*, and *Global Environmental Change: Human and Policy Dimensions*, as well as book chapters, articles in encyclopedias, conference proceedings, professional and general journals. Dr. Uitto has served as visiting lecturer and given seminars and guest lectures in several universities in the United States, Japan and Europe. He holds an MSc degree in geography from the University of Helsinki in his native Finland, and PhD in social and economic geography from the University of Lund in Sweden.