

THE IMPACT OF URBANIZATION ON RURAL LAND USE

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Summary

This contribution reviews the broad-ranging impacts of urbanization on rural land use, differentiating between processes, impacts, and policy in older industrialized countries, newer industrialized countries, and developing countries. Set against the challenges of sustainable development, urbanization processes are analyzed first in relation to underlying reasons for migration to urban areas. There is a differentiation between already industrialized countries and newer, industrializing countries. The analysis of the impacts of urbanization on rural land use distinguishes between positive, symbiotic relationships and conflicted relationships leading to degradation of rural land use, especially agricultural structures and production.

We differentiate between push and pull factors, highlighting the experience of different countries according to their level of socioeconomic development. The nature of rural land use is examined, making clear the distinction between use and function (collective values) and including the quality of the resource base, how it is used (including tenure), and the socioeconomic organization of production. The impacts of urbanization on rural land use is analyzed using a framework that sets out the various stresses and demands generated by urbanization processes and the factors that influence whether the impacts are seen as positive or negative. An important distinction is made between rural areas in metropolitan regions and those farther removed. The conditions under which symbiotic relationships between urbanization and rural land use are maintained, rural land use and resources are degraded, or under which the rural community and rural land use are simply undermined are explored. Specific impacts are analyzed in more detail, i.e. agricultural land use and resources, and the complex phenomenon of the rural community.

Urban fringe agriculture in older industrialized countries is contrasted with urban agriculture in developing countries in Africa and Latin America. A framework is developed to explore public policy and action in relation to the issues surrounding urbanization impacts on rural land use. Some prescriptions are developed that respect different cultures and levels of socioeconomic development. Examples of policy and action are presented that go a long way toward meeting the challenges of sustainable development.

Finally, the multitude of policies and actions directed at mitigating the negative effects of urbanization on rural land use and community are considered, and the trends toward integrating more consideration of sustainability into land use management are highlighted in the conclusions.

1. Introduction

Urbanization is one of the oldest and most pervasive processes of change that has helped shape societies around the world. The purpose of this contribution is to review the broad-ranging impacts of urbanization on rural land use and the implications for sustainable rural land use, placing the analysis in the context of the wide range of situations found around the world. While the range of situations is indeed large, a caricature is often used in this text by contrasting processes, impacts, and policy in older industrialized countries with those in newer industrialized countries and developing countries.

First, the processes of urbanization are considered, defined, and analyzed. Second, the nature of rural land use is considered, and presented as a multifaceted phenomenon. Then, the impacts of urbanization are laid out, with the impacts presented as the result of a series of responses to a set of supply and demand situations created by urbanization processes. Particular attention is paid to emphasizing the highly differentiated nature of the impacts, ranging from positive complexes of change for rural land use to situations of rapid degeneration of rural land use. The impacts of agriculture are singled out for more detailed treatment, and the broader impacts on various components of rural

community are treated. Finally, issues of policy and collective action are treated in a concluding section, in the context of sustainability.

2. Urbanization as Process

Urbanization is a dynamic set of processes, responding to changing values and perceptions of the intrinsic characteristics of rural versus urban areas. It is not a single process, although all are interrelated. At the macro scale, urbanization can be defined as the increasing concentration of population in urban areas both relatively and absolutely. Driven by values and the perceptions of the realities of quality of life differentials (e.g., jobs, living conditions) between urban and rural areas, the results and consequences have been vastly different in the older industrialized countries and developing countries. At the same time, urbanization has also been regarded as synonymous with urban expansion, particularly the type of urban growth known as urban sprawl, a set of processes that operate at regional (or micro) and local levels. Macro scale processes of urban growth are easy to link to urban expansion and sprawl. However, expansion of the urban area can take place in the absence of major increases in population and activity concentration in urban regions simply as the result of people's search for alternative lifestyles and of the different and evolving needs of human activities, particularly in the older industrialized countries. These evolving needs over the course of the twentieth century have included:

- greater land requirements for horizontally laid out industrial production processes
- the changing nature of retail spaces in the development of large shopping centers with their associated parking infrastructure
- the space needs of transportation infrastructure such as airports and highways at the edge of major urban areas.

2.5. Sustainable Development Challenges under Urbanization Processes

There is broad consensus that sustainable development represents the search for development strategies in which there is a convergence of environmental, social, cultural, and political values. Further, this search involves such considerations as achieving equity between different population segments and between successive generations, involving people as directly as possible and responding to people's needs. However, while there may well be some absolute imperatives, e.g., in relation to the biophysical environment, it is clear that there is no easily defined absolute overall target to which sustainable development strives, because all of the human components of sustainability are dynamic, and, to a large degree, culturally specific.

First, human values change over time as socioeconomic progress is registered and human needs evolve. Immediately, this should warn us of the pitfalls of trying to establish targets without orchestrating processes for ongoing review and planning. Second, human values vary from one culture to another. Traditions, how authority is perceived, how elected politicians and bureaucracies are perceived, and how individuals are valued vary from one national culture to another and even within countries. Thus, while public participation in planning and management is considered an essential

ingredient in pursuing sustainability in some cultures, the value placed on it in others is significantly less. The conclusion reached by many observers is that sustainable development is thus a socially constructed phenomenon. Making prescriptions about sustainable development is indeed a hazardous undertaking!

Third, the socioeconomic systems of production of which rural/agricultural land use is a part vary significantly from one place to another and over time. Contrast for instance a subsistence form of production with a family-farm-based mode of production (see Figure 1) or with a more capitalist mode of agricultural production (see Figure 2).

First, assume that each mode of production is characterized by different motivating forces (e.g., feeding the family, producing some produce for the market to generate income to use in purchasing other goods and services or for maximizing profits), different technical features (e.g., the use of tools versus the use of machinery), different financial characteristics (e.g., the use of family savings versus the use of credit), and different relationships to the consumer or a market (e.g., domestic consumption, production for a local market, or production for the national or international market). Second, then, in the face of a given set of pressures or stresses (e.g., demand for land for urban expansion, increased cost of credit), different socioeconomic modes of production can be expected to respond in different ways, even if they possess the same biophysical resource base to start with.

Once again, this complicates enormously the definition of processes for achieving sustainable development paths; even in advanced industrialized countries such as France and the US. While rural areas in a given metropolitan region may be dominated by family farm modes of production, there may be an important layer of capitalistic agriculture along with not insignificant vestiges of an earlier more subsistence mode of production.



Figure 1. Farmyard scene on a small family farm



Figure 2. Large scale, capitalistic grain farming

Urbanization processes in different countries reflect the differential evolution of human values. Any process of change generates stresses, and urbanization processes are no exception. In the rural communities affected by these processes, pressures are exerted upon the natural resource base, sociodemographic structures can change, bringing groups of people together from different experiences, expectations, and needs, and even the political landscape is changed locally. Because the macro scale processes of urbanization have been associated with some of the most far-reaching changes in societies around the world, we next turn to consider urbanization in relation to migration processes.

2.6. Urbanization and Migration

The broader scale process of urbanization involves the increasing concentration of populations into urban areas (and urban regions); thus, migration from rural to urban areas and regions is one of the principal mechanisms of urbanization. A major component of this increasing population and human activity concentration is an increased weight associated with a country's main metropolitan centers. However, the underlying reasons for migration to urban areas and regions vary substantially among countries.

A useful way of characterizing the situation is to distinguish between *migration d'appel* (pull-based migration) and *migration de refoulement* (push-based migration). In both situations, migration is related to people's perceptions of the differentials between urban and rural areas and regions. The distinction between the two types of migration is related to whether these perceptions are reflected in the actual experience of migrants after their arrival in the urban zone. *Migration d'appel* involves differentials being driven by real differences in living standards, job opportunities, income opportunities, and access to services. While not everyone participating in such migration necessarily finds satisfaction, the argument is that for this type of migration the pull factors are real. We can argue that this has been the case, overall, for much of the rural to urban migration that fueled urban growth processes in industrialized countries over the nineteenth century and is reflected in the continued processes of concentration today, e.g., in North America and Western Europe, particularly in metropolitan regions. While

in the US during the 1960s and in some other countries such as Canada in the late 1970s a reversal of such tendencies was observed, this rural renaissance has been short-lived. Indeed, a good part of this rural renaissance was simply the spatial expression of growth processes emanating from major urban and metropolitan regions spilling over their statistical boundaries into adjacent rural areas.

On the other hand, *migration de refoulement* involves migration fueled by perceptions of better things to come in urban areas. However, the perceptions are not borne out in the lived experience of the migrants. Under such circumstances, we observe the development of shantytowns on the edges of sprawling urban areas in, for instance, many African and Latin American countries. These new disorganized settlements are characterized by unsanitary living conditions, poor to nonexistent infrastructure and services, extreme poverty, and high levels of criminality. Even some areas in newly industrializing countries appear to possess the same characteristics, e.g., some of the residential zones associated with the industrial *maquiladeros* in Mexico. However, while they may appear to be harsh living environments to many, there is also employment for many, and the migrants may see themselves as better off than in the rural areas from whence they came.

2.7. Links with Industrialization, Technological Change, and Globalization

Clearly, these urbanization processes have been intimately linked with industrialization and, during the latter half of the twentieth century, the tertiarization of national economies. Industrialization and later tertiarization fueled the expansion of employment opportunities in urban regions. Technological change in production processes has also contributed to this geographic concentration because it encouraged early on the development of large-scale industrial production facilities.

The other side of the coin, however, has been the observation of decline and stagnation in many resource regions and other rural areas. First, these areas have been associated with perceived inadequacies in terms of services and quality of life, including access to a wide range of employment opportunities. Second, the economic activities that evolved in these rural regions, such as Canada's northern areas, the western agricultural regions of North America, and the remoter rural regions in much of Europe, have been impacted by ongoing technological change that has permitted the substitution of capital for labor, thus reducing employment needs in those same regions.

This has been true for activities such as mining, fishing, and forestry, and for agriculture. The results have been high unemployment rates and an exodus of populations, especially of young people. This has made such regions even more vulnerable. Finally, these regions have also had to deal with some of the worst negative effects of globalization. Transnational companies in their search for efficiencies have sought out more competitive sources of materials, and corporations have been restructured to cope with global competition. Rural resource regions have appeared to be caught in the middle. And to the extent to which urbanization has spawned metropolization and the growth of major world metropoli, rural resource regions have appeared to be left behind more and more in the quest for a stable and dignified existence in the modern world.

2.8. The Role of Values in Migration

Human values and particularly the search for human betterment are thus all important in understanding the magnitude of the urbanization processes at the macro scale. At the same time, the movements of population at the regional scale as part of urban expansion and urban fringe development processes are also deeply rooted in human values. Changing values—the search for alternative lifestyles involving access to open space, peace and quiet, the desire to own a home—has been facilitated in Western countries by increasing car ownership and massive public investment in major highway construction, and by the extension of public transportation.

3. Rural Land Use

3.2. Components of Rural Land Use with Particular Reference to Agriculture

Rural land use is more than simply the physical use of land. At the most detailed level—the individual occupier and user of land, the concept of rural land use encompasses the following dimensions:

- the specific use of the land (a what question),
- the methods and means of production, including resource base and how labor and capital are combined (a how question),
- the socioeconomic organization of production and the objectives associated with it (another how question, a why question, and a for whom question)
- the ownership arrangements related to the land base or land tenure arrangements (another for whom question and part of the socioeconomic structure of production).

At the collective level, other important considerations are: the function of the land in society or its collective purpose (collective defined locally, regionally, and/or more broadly) and the links between the use of the rural land and the structure and dynamic of the rural community.

The functions of rural (and particularly agricultural) land can be classed as:

- a production function (producing agricultural products and services);
- a resource protection function (e.g., the maintenance of agricultural production of particular types to contribute to the maintenance and protection of, say, water quality and wildlife habitat, maintaining agricultural land resources for current and future agricultural production);
- a landscape protection function (whereby the agricultural landscape contains valued reminders of historic and cultural heritage, as well as contributing to aesthetic values, e.g., through setting off rural, open landscapes against urban development zones—in other words, an urban design function);
- an educational and scientific function;
- maintaining land reserves for future nonagricultural and rural uses.

Other aspects of rural land use that are relevant in considering the impact of urbanization upon rural land use, particularly from the sustainable development perspective, are efficiency and equity. They can also be linked to the above discussion on collective functions of the land. Efficiency can be most easily related to the individual production function of agricultural land use. Physical efficiency thus relates to the volume of inputs required to produce a given level of output and economic efficiency to the value of inputs for a given volume (value) of output. In the context of urban expansion into the urban fringe and urbanization more generally, some of the relative values of different inputs are modified in the competitive process. Farmland becomes more expensive, labor for farming becomes scarcer, and farms must compete with other sectors for access to credit. From an efficiency perspective therefore, such stresses call for a response from the farm production system, principally in terms of modifying the combination of inputs used to produce a given level of output. This provides us with one source of explanation for many of the impacts that urbanization has had on rural and particularly agricultural land use.

Equity considerations relate more directly to a collective assessment of land use and the impacts it is subjected to. Equity considerations raise questions regarding fairness and equal treatment, of not having one segment of the population (e.g., farmers) carry the costs of changes or policies to benefit the broader society, particularly when that segment of the population is not as well off as other segments, and also of ensuring that particular patterns of rural land resource use do not penalize future generations just to benefit the present one.

An appreciation of the impacts of urbanization on rural land use therefore should take into consideration this broad set of characteristics or aspects of rural land use. Considering the collective functions and values of rural land and their compatibility with the needs and objectives of the individual producer and user of rural land presents a major set of challenges to achieving sustainable development paths, as we shall discuss in the following sections.

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Biographical Sketch

Christopher Bryant, Ph.D., received his doctorate from the London School of Economics, University of London, in 1970. He was on the faculty in the Geography Department at the University of Waterloo from 1970 to 1990, and in the Département de Géographie, Université de Montréal, from 1990 on. He has published widely in the field of the dynamics of urban fringe areas, especially agricultural areas, the management and planning of rural land use, local and community development, and sustainable development. He was Vice-Chair of the International Geographical Union Commission on the Sustainability of Rural Systems from 1996 to 2000, and then its Chair, a group that has close to 400 members from more than forty countries.