

Development of Regional Measurement Methods: The Context for Quantifying Influence and Impact

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Many urban areas, in both developed and developing countries, have been subject to the forces of relatively uncontrolled expansion and sprawl. While the political, social and economic drivers of sprawl may not affect urban areas identically around the world, all urban areas rely on suburban, rural, and other less densely settled lands to supply the resources necessary for their existence. Sprawling land patterns have changed the regional balance between land dedicated to resource consumption (urban areas) and resource production (rural areas), a balance essential to the long-term sustainability of human systems.

IN THIS CONTEXT, it is critical to the long-term vitality of these urban areas to ensure that resource consumptive and productive land patterns are in balance. Current measurement methods, however, such as indicator frameworks, ecological footprint analysis, and urban metabolism focus primarily on the urban portion of the region and neglect exurban (rural) areas. In order to quantify the impacts of various urban land patterns on their supporting resources, and to assess the relative properties (or impacts) of various land patterns, exurban lands must be included as an integral part of the assessment scheme. This need for a regional view has driven the development of a quantitative measurement method, titled regional characteristic curves, which enables relative comparisons between differing regional land-use patterns.

The purpose of this paper is to review the range of historical and current land-pattern measurement methods, detail their shortcomings in addressing regional land-pattern comparison, and to illustrate the niche filled by the regional characteristic curve method.

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