

Name: Marco Quiroga

Institution: Pontificia Universidad Católica de Chile

Title of the work: The Urban Metrics of the Bogota Metropolitan Area: towards an index of sustainability

Overall project: Risk Habitat Megacity

Supervisor: Pontificia Universidad Católica de Chile, Forschungszentrum Karlsruhe (FZK)

Last update: September 2009

Generating indicators that reveal the complexity of urban sustainability in a metrópolis, constitutes a challenge for academic work and for decision-makers working towards more integrated development in different territorial contexts. This paper makes a contribution to current theories and technical debates relating to sustainability evaluation in Latin American urban areas, with the objective of perfecting current instruments and strategies that will in turn lead to more effective decision-making.

The paper presents a background to processes and mechanisms developed for the production of information about the Bogota Metropolitan Area, which reveal the problems associated with the sustainability of the city, identifying current evaluation indicators that could potentially be strengthened within a new system orientated towards the construction of complex indicators, otherwise known as third generation (G3). In the case of the Bogota Metropolitan Area, of particular importance is the representation of contexts generated by urban expansion due to socio-economic dynamics that give rise to a certain land use, giving rise, in turn, to recurrent social and environmental problems.

Different aspects of the city are dealt with in the paper in order to engage with the analytical complexity of sustainability as a category that seeks to provide a comprehensive view of the current situation, also the search for indicators capable of reflecting the multiple interconnections and dimensions of the evaluation model. A conceptual approximation of third generation indicators is made by Quiroga (2001:114) who defines them as being in a process of construction and which "...correspond to linking, synergetic or transversal indicators which simultaneously incorporate diverse attributes and dimensions of sustainable development."

This type of indicators (G3) enables the linking of environmental sustainability, social sustainability and economic sustainability in urban models from an ecosystemic conceptualization, in which it is insufficient to analyse components in a fragmented way, without integrating interrelations that generate improved living conditions for urban populations (Odum, 1963; Huggett, 1983; Douglas, 1983 en Bettini, 1998).

The need for macro and microeconomic indicators, also environmental and sociocultural indicators, that measure the different dimensions that constitute the sustainability concept, is a theme developed by numerous authors, including Bell and Morse (1999), Dresner (2002), and Gallopín (2003), for whom it is necessary to articulate economic development, environmental equilibria and social equity in terms of how they contribute to the complex comprehension of the socioecological situation generated by political frameworks of action shaped by a sustainability proposal. Also relevant is Agenda 21 (UNCED, 1992) which requires the precision of standards and reference levels for analysis and comparison of quality of life services as an operational approximation of urban sustainability.

Based on principles and sustainability criteria revealed in G2 indicators, data bases that emerge from reflexive needs for weighting and participation, precision regarding urban transformation processes over time, feedback from results of actions based on the visions of relevant actors, and the evaluation of current conditions provided by a metropolitan profile,

are all elements for the generation of a indicators of urban metrics, that in turn should contribute to more efficacious decision-making.

Key words: urban sustainability, Bogota, measurement systems, third generation indicators