Emergy-based Ecological Pressure Analysis of Land Use in China

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ABSTRACT

This paper provides an integrated study on the land eco-economic system. Applying emergy analysis method, we use Chinese county-wide of year 1996, 2000, 2004 and 2008 to calculate the renewable support area, synchronal support area, and capability of support area in view of temporal and spatial variations at county level in China. Spatially, the overall patterns of RSA, RRA and CSA are uneven in different parts. East region has higher values than west region, also associated with wider changes in the procedure of environmental development. Temporally, overall trends do not stabilize. The three study periods (1996-2000, 2000-2004 and 2004-2008) have different transition styles. RSA, SSA and CSA increase from 1996 to 2000, and decrease from 2000 to 2004. From 2004 to 2008, all items increase again and exceeded the values in 2000. In general, the lower and upper bounds to local environments for economic developments become stricter and need a larger quantity of areas to support local developments. Moreover, the driving forces of RSA vary significantly across provinces due to diversities of geographic features and economic development levels. Much more work needs to be done to cope with the forthcoming dramatic changes associated with land eco-economic system from the points of environmental pressure in China.

Citation
