

问题讨论

# 生态足迹分析应用于区域可持续发展生态评估的缺陷

彭建<sup>1,2</sup>, 吴健生<sup>1,2</sup>, 蒋依依<sup>1,2</sup>, 叶敏婷<sup>1,2</sup>

1. 北京大学深圳研究生院数字城市与城市景观研究中心, 深圳518055

2. 北京大学环境学院, 北京100871

收稿日期 2006-2-27 修回日期 2006-5-10 网络版发布日期: 2006-8-25

**摘要** 可持续发展的生态评估是当前国际生态经济学与可持续发展研究的前沿问题之一, 生态足迹从生物生产的角度可以定量评估一个国家或地区发展的生态持续性程度, 是近年来发展迅速的一种生物物理量衡量方法。尽管生态足迹分析具有指标指示意义明确、评估结果全球可比与模型方法简便、资料易获取、可操作性强等优点, 但在理论方法上仍存在不足之处。综合国内外区域生态足迹分析的最新进展, 生态足迹分析应用于区域可持续发展生态评估的理论缺陷主要表现为以下6点: ①弱可持续性评价, 难以完整反映系统的可持续性状态; ②静态模型, 缺乏预测功能; ③长时间序列生态足迹研究的合理性有待商榷; ④全球平均生产力的相对性, 导致评估结果的非绝对性; ⑤过于强调土地的数量, 而忽略土地的质量; ⑥假定各类生物生产性土地类型的空间互斥性, 忽视兼业性。

**关键词** [生态足迹分析](#); [区域可持续发展](#); [生态评估](#); [缺陷](#)

分类号 [S718](#)

## Shortcomings of applying ecological footprints to the ecological assessment of regional sustainable development

PENG Ji an<sup>1,2</sup>, WU Ji an-Sheng<sup>1,2</sup>, JIANG Yi -Yi <sup>1,2</sup>, YE Mi n-Ting<sup>1,2</sup>

1. Center of Digital City and Urban Landscape, Shenzhen Graduate School, Peking University, Shenzhen 518057, China;

2. College of Environmental Sciences, Peking University, Beijing 100871, China

**Abstract** Ecological assessment of sustainable development is one of the leading fields of international ecological economics and of researches on sustainable development. Ecological footprinting, which is a new biophysical method of ecological assessment, is developing rapidly. It quantifies the ecological sustainability of the development of a nation or an area from the standpoint of biological production. Ecological footprint analysis is superior to other biophysical methods of ecological sustainability assessment in three respects: firstly, the indices used have specific meanings; secondly, the model is easy to comprehend and readily applied to different contexts; and thirdly, the data required are widely obtainable, allowing global comparisons. However, ecological footprint analysis is not without its shortcomings. As case studies accumulate, the need to adjust theoretical models of ecological footprints is becoming increasingly apparent. Research on the theoretical shortcomings of ecological footprinting is an important preliminary to such adjustments. From a review of the latest research, we can identify six key issues in applying ecological footprint analysis to ecological assessment of regional sustainable development. First, the weakness of sustainability assessments makes it difficult to reflect the state of sustainability of the system as a whole. Second, as it is a steady state model, it lacks predictive power. Third, how to apply ecological footprint analysis over long time series is still being worked out. Fourth, the relativity of global mean productivity means that the results of assessment are relative rather than absolute. Fifth, too much weight is put on land quantity while land quality is overlooked. Sixth, the assumption that biologically productive land use types are mutually exclusive (i.e. do not overlap) ignores the possibility that they are compatible. Notwithstanding these theoretical shortcomings, the ecological footprint method can effectively assess the ecological sustainability of regional development, at least in terms of th

### 扩展功能

#### 本文信息

▶ [Supporting info](#)

▶ [\[PDF全文\]\(0KB\)](#)

▶ [\[HTML全文\]\(0KB\)](#)

▶ [参考文献](#)

#### 服务与反馈

▶ [把本文推荐给朋友](#)

▶ [加入我的书架](#)

▶ [Email Alert](#)

▶ [文章反馈](#)

▶ [浏览反馈信息](#)

#### 相关信息

▶ [本刊中 包含“生态足迹分析; 区域可持续发展; 生态评估; 缺陷”的 相关文章](#)

▶ 本文作者相关文章

· [彭建](#)

· [吴健生](#)

· [蒋依依](#)

· [叶敏婷](#)

e supply and demand of biologically productive land, and at least at the global scale. However, at national, regional and local scales, the shortcomings will significantly affect the validity and accuracy of assessments. It is therefore necessary to adjust the theoretical model of the ecological footprint. An important and feasible approach to such improvement would be to add a quality dimension to the measurement units of global hectares, hectares of bioproductive land, and global average productivity of sea areas. Also, extending the analysis to the supply and demand of all kinds of biologically productive land could provide more information on ecological sustainability.

**Key words** [ecological footprint analysis](#) [regional sustainable development](#) [ecological assessment](#) [shortcoming](#)

DOI

---

通讯作者 彭建 [jianpeng@hotmail.com](mailto:jianpeng@hotmail.com)