

[本期目录](#) | [下期目录](#) | [过刊浏览](#) | [高级检索](#)[\[打印本页\]](#) [\[关闭\]](#)**论文****乌昌地区能矿资源开发利用的可持续能力评价**杨宇<sup>1,2,3</sup>, 董雯<sup>4</sup>, 刘毅<sup>1,2</sup>, 张小雷<sup>4</sup>, 雷军<sup>4</sup>

1. 中国科学院地理科学与资源研究所, 北京 100101;
2. 中国科学院区域可持续发展分析与模拟重点实验室, 北京 100101;
3. 中国科学院研究生院, 北京 100049;
4. 中国科学院新疆生态与地理研究所, 乌鲁木齐 830011

**摘要:**

选取乌昌地区为研究区域,综合运用频度分析法、理论分析法和专家咨询法构建指标体系,通过层次分析法对乌昌地区能矿资源的可持续利用能力进行评价,得出结论:1)能矿资源规模与供给系统指数呈现明显的波动状态,分别在1999年和2005年形成波谷;2)资源利用的经济效益系统指数基本呈现上升趋势;3)环境压力与环境治理系统指数呈现明显的阶段性上升的特征;4)乌昌地区能矿资源可持续利用的能力指数呈现出平稳上升的趋势。受乌昌地区水资源短缺和生态环境脆弱等因素影响,对能矿资源可持续能力影响最大的子系统为环境压力与环境治理系统。在各指标中,对能矿资源可持续能力影响较大的指标是能矿资源生产总量、水资源利用相关指标以及资源型产业的GDP和资源型产业固定投资比重等。

**关键词:** 能矿资源 可持续利用 能力评价 层次分析 乌昌地区

### Assessment of sustainable ability of energy and mineral resources exploitation in Wu-Chang region

YANG Yu<sup>1,2,3</sup>, DONG Wen<sup>4</sup>, LIU Yi<sup>1,2</sup>, ZHANG Xiao-Lei<sup>4</sup>, LEI Jun<sup>4</sup>

1. Institute of Geographic Sciences and Nature Resources Research, Chinese Academy of Sciences, Beijing 100101, China;
2. Key Laboratory of Regional and Sustainable Development Modeling, Chinese Academy of Sciences, Beijing 100101, China;
3. Graduate University, Chinese Academy of Sciences, Beijing 100049, China;
4. Xinjiang Institute of Ecology and Geography, Chinese Academy of Sciences, Urumqi 830011, China

**Abstract:**

We use the frequency analysis, theoretical analysis, and expert consultation methods to build an index system, and estimate the capacity of the sustainable utilization of energy and mineral resources in Wu-Chang region by AHP. The conclusions are as follows: 1) the indexes of the resources scale and support system show significant fluctuations, forming troughs in 1999 and 2005, respectively; 2) the economic resources system index shows an upward trend; 3) environmental pressure and environmental management system indexes show obvious rising phase characteristics; and 4) the sustainable capacity indexes of the energy and mineral resources utilization in Wu-Chang region show steady increasing trends.

**Keywords:** energy and mineral resources sustainable utilization competency assessment AHP Wu-Chang region

收稿日期 2010-04-16 修回日期 2010-09-17 网络版发布日期

DOI:

基金项目:

国家自然科学基金(41071113)和中国科学院西部博士资助项目(XBBS200805)资助

通讯作者:

作者简介:

作者Email: popolar@163.com, liuy@igsnrr.ac.cn

**扩展功能****本文信息**

- ▶ Supporting info
- ▶ PDF(928KB)
- ▶ [HTML全文]
- ▶ 参考文献[PDF]
- ▶ 参考文献

**服务与反馈**

- ▶ 把本文推荐给朋友
- ▶ 加入我的书架
- ▶ 加入引用管理器
- ▶ 引用本文
- ▶ Email Alert
- ▶ 文章反馈
- ▶ 浏览反馈信息

**本文关键词相关文章**

- ▶ 能矿资源
- ▶ 可持续利用
- ▶ 能力评价
- ▶ 层次分析
- ▶ 乌昌地区

**本文作者相关文章**

PubMed

**参考文献:**

[1] World Commission on Environment and Development. Our common future (brundtland commission report)

[M]. New York: Oxford University Press, 1987.

[2] OECD. Group on the state of the environment workshop on indicators for use in environment performance reviews: draft synthesis report . Paris, 1993.

[3] Department of the environment of UK. Indicators of sustainable development for the United Kingdom

[M].London: HMSO, 1994.

[4] Li L F, Zheng D. Assessment of regional sustainable development: progress and outlook

[J]. Progress in Geography, 2002, 21(3):237-248 (in Chinese). 李利锋, 郑度. 区域可持续发展评价:进展与展望

[J].地理科学进展,2002,21(3):237-248.

[5] Qin Z Y, Xu M J. Study on index system for regional sustainable development

[J].Acta Geographica Sinica, 1998,53 (2):149-155 (in Chinese). 秦振耀, 徐铭杰. 区域可持续发展的指标研究

[J].地理学报,1998,53(2):149-155.

[6] Mao H Y. The research about an indicator system of sustainable development in Shandong province

[J]. Geographical Research, 1996, 15(4):16-23 (in Chinese). 毛汉英. 山东省可持续发展指标体系初步研究

[J].地理研究,1996,15(4):16-23.

[7] Yu D L. Thought about building an indicator system of sustainable regional development

[J]. Progress in Geography, 1998, 17(2):84-89 (in Chinese). 余丹林. 区域可持续发展指标体系的构建思路

[J].地理科学进展,1998,17(2):84-89.

[8] Li L F, Zheng D. A study on the assessment of sustainable regional development in Lhasa area

[J]. Geographical Research, 2004, 23(4):551-561 (in Chinese). 李利锋, 郑度. 区域可持续发展评价——以拉萨地区为例

[J].地理研究,2004,23(4):551-561.

[9] Liu J S. The strategy management mechanism of resources based on sustainable

development .Tianjin: Tianjin University,2003 (in Chinese). 刘家顺. 基于可持续发展的资源战略管理机制研究 .天津:天津大学,2003.

[10] Fan J. Problems, reasons and strategies for sustainable development of mining cities in China

[J].Journal of Natural Resources, 2005, 26(1):68-78 (in Chinese). 樊杰. 中国矿业城市持续发展的问题、成因与策略

[J].自然资源学报,2005,26(1):68-78.

[11] Zhang L. Mineral sustainable supply and its spatial reorganization in China

[J]. Journal of Natural Resources, 2002, 17(2):162-167 (in Chinese). 张雷.中国矿产资源持续开发与区域开发利用战略调整

[J].自然资源学报, 2002,17(2):162-167.

[12] Li W Y. Industrial development of coal-mine cities and city planning issues

[J]. Acta Geographica Sinica, 1978, 33(3):63-79 (in Chinese). 李文彦.煤矿城市的工业发展与城市规划问题

[J].地理学报,1978,33(3):63-79.

[13] Fan J. A study on the industrial structure transformation of coal-mine cities in China

[J]. Acta Geographica Sinica, 1993, 48(3):218-225 (in Chinese). 樊杰.中国煤矿城市产业结构转换问题研究

[J].地理学报,1993,48(3):218-225.

[14] Shen L. On the superiority transformation strategies of mining cities for sustainable development

[J]. China Mining, 1998, 7(3):6-9 (in Chinese). 沈镭.论矿业城市可持续发展的优势转换战略

[J].中国矿业,1998,7(3):6-9.

[15] Dong W, Du H R, Zhou Y S. Study on resource-based industry and urban development in the Urumuqi-Changji region, China

[J].Journal of Natural Resources, 2010, 25(4):657-665 (in Chinese). 董雯,杜宏茹,周艳时.中国乌昌地区资

源型产业的集聚特征及其城市化效应研究  
[J]. 自然资源学报, 2010, 25(4): 657-665.

[16] UN Commission on Sustainable Development. Indicators of sustainable development framework and methodologies  
[M]. New York: UN, 1996.

[17] 中国科学院可持续发展研究组. 中国可持续发展战略报告  
[M]. 北京: 科学出版社, 2001.

[18] Mohan M, Jeffret M. Key concepts and terminology of sustainable development, defining and measuring sustainability  
[M]. New York: The Biogeochemical Foundations, 1996.

[19] 贾华强. 可持续发展经济学导论  
[M]. 北京: 知识出版社, 1996.

[20] Qiao J J, Xu P, Wang Y X. A review of indicator system of regional sustainable development  
[J]. Journal of Henan University: Natural Science, 2002, 32(4): 71-75 (in Chinese). 乔家君, 许萍, 王宣晓. 区域可持续发展指标体系研究综述  
[J]. 河南大学学报: 自然科学版, 2002, 32(4): 71-75.

[21] Brown L R. Building a sustainable society  
[M]. New York: W W Norton, 1981.

[22] Turner R K. Sustainable environmental economics and management: principles and practice  
[M]. Boulder: West View Press, 1993.

#### 本刊中的类似文章

1. 代雪静, 田卫. 水质模糊评价模型中赋权方法的选择 [J]. 中国科学院研究生院学报, 2011, 28(2): 169-176