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中美生态、能源及可持续性科学研究中心

SUCCESS Sino-US Center for Conservation, Energy and Sustainability Science

SUCCESS PROGRESS REPORT

(Dec. 2007- Sept. 2009)

I. RESEARCH

1. Research Grants Obtained

- Research on the strategy of ecological environment construction and sustainable development in Ordos (June 2008 - May 2010)
PI: Jie Yang
Funds: 3 millions RMB from Ordos People's Government in Inner Mongolia
- Research on the management model innovation of mineral resources in Inner Mongolia (Sept. 2008 - Dec. 2010)
PI: Xiaochuan Guo
Funds: 200 thousands RMB from Chinese Ministry of Science and Technology
- Research on sustainable development mode of energy industries in Ordos (June 2008 - July 2009)
PI: Xiaochuan Guo
Funds: one million RMB from Ordos People's Government in Inner Mongolia
- Policy release and path choice for Wulanchabu's economic rise (June 2008 - July 2009)
PI: Xiaochuan Guo
Funds: 500 thousands RMB from Wulanchabu People's Government in Inner Mongolia
- Research on the tendency of population aging and policy model of providing for the aged in Inner Mongolia (June 2009 – Sept. 2009)
PI: Xiaochuan Guo
Funds: 40 thousands RMB from Inner Mongolia Population and Family Planning Commission

2. New Grants Recently Obtained

- Study on the impact of rapid urbanization on the ecosystem processes – A case study of Hohhot and Baotou city of Inner Mongolia (Jan. 2010 – Dec. 2012)
PI: Alexander Buyantuyev
Funds: 320 thousands RMB from NSFC
- Profit distribution of dairy industry in China based on value chain management (Jan. 2010 – Dec. 2012)
PI: Guixia Qian
Funds: 210 thousands RMB from National Science Foundation of China (NSFC)

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- DEA method and pedigree analysis on economic effectiveness of Inner Mongolia. (Jan. 2010 – Dec. 2012)
PI: Zhanxin Ma
Funds: 220 thousands RMB from NSFC
 - Analysis on genetic diversity of AM fungal population of Living fossil and mycorrhiza mutualism mechanism in western Ordos of Inner Mongolia (Jan. 2010 – Dec. 2012)
PI: Yuying Bao
Funds: 230 thousands RMB from NSFC
 - Analysis on relationship of vegetation characteristics and stability of ravines in Loess Hilly-gully Region (Jan. 2010 – Dec. 2012)
PI: Liqing Zhao
Funds: 240 thousands RMB from NSFC
 - Analysis on the impact of property system and economic policy to the sustainable development of grassland (Sept. 2009 - Oct. 2011)
PI: Chana
Funds: 100 thousands RMB from National Planning Office of Philosophy and Social Sciences

3. Publications

3.1 Books/Proceedings

- Morrison Institute for Public Policy, Arizona State University. 2009. Sustainability for Arizona: The Issue of Our Age. (Chinese translation)
- Wu, J. and J. Yang (eds). 2009. Lectures in Modern Ecology (IV): Theory and Applications. Higher Education Press, Beijing.
- Gu, B., J. Wu, J. Chen, and Y. Wu (eds). 2008. Green Careers. Higher Education Press, Beijing.
- The Proceedings of the First SUCCESS Forum on Sustainability Science, Sino-US Center for Conservation, Energy, and Sustainability Science, Inner Mongolia University, Hohhot, 2008.

3.2 Journal Articles/Book Chapters

- 1) Bai, Y. J. Wu, C. M. Clark, S. Naeem, Q. Pan, J. Huang, L. Zhang, and X. Han. 2009. Tradeoffs and Thresholds in the Effects of Nitrogen Addition on Biodiversity and Ecosystem Functioning: Evidence from Inner Mongolia Grasslands. *Global Change Biology*. (in press)
- 2) Bai, Y., J. Wu, Q. Xing, Q. Pan, J. Huang, D. Yang, and X. Han. 2008. Primary production and rain use efficiency across a precipitation gradient on the Mongolia Plateau. *Ecology* 89: 2140–2153.
- 3) Buyantuyev, A. and J. Wu. 2009. Urban heat islands and landscape heterogeneity: linking spatiotemporal variations in surface temperatures to land-cover and socioeconomic patterns. *Landscape Ecology* DOI 10.1007/s10980-009-9402-4.

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- 4) Buyantuyev, A. and J. Wu. 2009. Urbanization alters spatiotemporal patterns of ecosystem primary productivity: A case study of the Phoenix metropolitan region, USA. *Journal of Arid Environments* 73:512-520.
 - 5) Buyantuyev, A., C. Gries, and J. Wu. 2009. Multiscale Analysis of the Urbanization Pattern of the Phoenix Metropolitan Landscape of USA: Time, Space and Thematic Resolution. *Landscape and Urban Planning* (accepted).
 - 6) Chen, X. and J. Wu. 2009. Sustainable landscape architecture: implications of the Chinese philosophy of "unity of man with nature" and beyond. *Landscape Ecology* 24:1015–1026.
 - 7) Li, Z., J. Wu, X. Kou, Y. Tian, T. Wang, P. Mou, and J. Ge. 2009. Land use pattern and dynamics in the distribution region of the Amur tiger. *Chinese Journal of Applied Ecology* 20 (3): 713-724. [In Chinese with an English abstract]
 - 8) Liu, J. and J. Wu. 2008. Perspectives and prospects of biofuels. *Acta Ecologica Sinica* 28(4):1339-1353.
 - 9) Qian, G. and J. Xie. 2009. A closer look at the dairy safety in China from the supply chain. *China Dairy*. (in press)
 - 10) Qian, G., X. Guo, J. Guo, and J. Wu. 2009. Root causes of China's dairy crisis and policy recommendations. *Issues in Agricultural Economy*. (accepted)
 - 11) Shao, G. and J. Wu. 2008. On the accuracy of landscape pattern analysis using remote sensing data. *Landscape Ecology* 23:505–511.
 - 12) Tian, G. and J. Wu. 2008. Simulating land use change with agent-based models: progress and prospects. *Acta Ecologica Sinica*. 28(9): 4451-4459.
 - 13) Tian, Y., J. Wu, X. Kou, Z. Li, T. Wang, P. Mou, and J. Ge. 2009. Spatiotemporal patterns and primary drivers of the Amur tiger population dynamics. *Biodiversity Science* (in press) [In Chinese with an English abstract]
 - 14) Wang, T., X. Kou, Y. Xiong, P. Mou, J. Wu, and J. Ge. Temporal and spatial patterns of NDVI and their relationship to precipitation in the Loess Plateau of China. *International Journal of Remote Sensing*. (in press)
 - 15) Wu, J. 2008. Changing perspectives on biodiversity conservation: from species protection to regional sustainability. *Biodiversity Science* 16(3):205-213.
 - 16) Wu, J. 2008. Making the case for landscape ecology: an effective approach to urban sustainability. *Landscape Journal* 27:41-50.
 - 17) Wu, J. 2008. On scholarship and universities of the future. Pages 2-8 in: B. Gu et al. (eds.) *Green Careers*. Higher Education Press, Beijing.
 - 18) Wu, J., G. D. Jenerette, A. Buyantuyev, and C. L. Redman. 2009. Quantifying spatiotemporal patterns of urbanization: The case of the two fastest growing metropolitan regions in the United States. *Ecological Modelling*. (accepted)
 - 19) Xiao, H., F. Yuan and J. Wu. 2009. Factors affecting citation: A comparison between Chinese and English journals in ecology. *Journal of Applied Ecology*. 20(5): 1253-1262.
 - 20) Yang, L. and J. Wu. 2009. Scholar-participated governance as an alternative solution to the problem of collective action in social–ecological systems. *Ecological Economics* 68:2412–2425.
 - 21) Yang, L. and J. Wu. 2009. Seven design principles for promoting scholars' participation in combating desertification. *International Journal of Sustainable Development and World Ecology* (accepted).

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- 22) Yin, X., C. Liang, and L. Wang. 2009. Ecological Stoichiometry of Plant Nutrient at Different Restoring Succession Stages in the Typical Steppe of Inner Mongolia. *Journal of Plant Ecology*. (accepted)
 - 23) Yuan, F., J. Wu, Y. Bai and X. Han. 2009. Biodiversity and Ecosystem Functioning Relationship: A review. In: Wu, J. and J. Yang (eds). *Lectures in Modern Ecology (IV): Theory and Applications*. Higher Education Press, Beijing. Pages 1-37.
 - 24) Yuan, F., X. Han, J. Ge, and J. Wu. 2008. Net primary productivity of the *Leymus chinensis* steppe in Xilin River basin of Inner Mongolia and its response to global climate change. *Chinese Journal of Applied Ecology* 19(10):2168-2176.

II. EDUCATION AND PERSONNEL TRAINING

1. Annual Sustainability Forums

- The first SUCCESS Forum on Sustainability Science was held on Dec. 2, 2007 and 9 experts were invited to give lectures. They are from Arizona State University, BP, Tsinghua University, Beijing University and Chinese Academy of Science, respectively.
- The Second SUCCESS Forum on Sustainability Science was held on July 7- 8, 2009 and 11 experts were invited to give lectures. They are from Development Research Center of the State Council, the Party School of the CPC Central Committee, Chinese Academy of Environmental Sciences, Chinese Academy of Water Resources & Hydropower Sciences and Renmin University of China, respectively.

2. SUCCESS Seminar Series

9 seminars were held from April 21 to July 1, 2009 and SUCCESS adjunct professors introduced their research and exchanged ideas on research methods and fields.

3. Other Scholarly Exchange Activities

- SUCCESS received a 12-members delegation from John Hopkins University on May 23, 2008. Researchers and professors from SUCCESS exchanged ideas with them on the factors influencing Inner Mongolia's development, grassland ecology, water resources, energy industries, grassland protection and western regions development policies, etc.
- Prof. Jianguo Wu hosted a brainstorm meeting on July 10-11, 2008 and discussed with adjunct SUCCESS professors on the NSF proposal such as research topics, research personnel, etc.
- A seminar on how to prepare a proposal to NSFC was held on Jan. 12, 2009 and 4 experts were invited to give lectures. They are Prof. Yubao Gao, Prof. Yanfen Wang, Prof. Yongfei Bai and Prof. Weijun Shen, from Tianjin Normal University, Chinese Academy of Sciences, Botanical Institute of Chinese Academy of Sciences and South China Botanical Garden, respectively. Prof. Jianguo Wu and 4 experts explained the details of preparing proposals and gave the guidance to the researchers and professors from two colleges.
- After the Second SUCCESS Forum on July 8, 2009, experts gave suggestions on the future development of SUCCESS center in the seminar.
- 2 lectures on "How to write scientific paper and how to carry out scientific research" and "Landscape ecology and sustainability science" were given by Prof. Jianguo Wu on Mar. 13 and June 30-July 4, 2008, respectively. Researchers, professors and students from two colleges attended the lectures.

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- Prof. Jianguo Wu gave a presentation on “Elements of writing scientific papers” for researchers, professors and students from two colleges on March 11, 2009.
 - Prof. Alexander Buyantuyev gave lectures on “How to read and write scientific papers” for researchers, professors and students of two colleges on March 30, April 24 and May 10, 2009, respectively.
 - Prof. Jianguo Wu gave a presentation of “Inner Mongolia grassland, ecology, society, research opportunity” at Arizona State University on April 8, 2009.

4. Personnel

4.1 New Appointments

- Alexander Buyantuyev was employed as a full-time professor. He has started his research and teaching at Inner Mongolia University since Jan. 2009.
- Prof. Guo Jianjun from Development Research Center of the State Council was appointed as an adjunct professor.
- A research group was formed by 27 professors from two colleges of IMU.
- 8 guest professors were invited from famous universities and research institutes at home and abroad.

4.2 Training Abroad

- Prof. Jianming Niu visited Prof. J. Wu’s research lab at Arizona State University during March-June 2008.
- Prof. Guixia Qian visited Global Institute of Sustainability of ASU (hosted by Prof. J. Wu) during October 2008 - March 2009.
- Prof. Chana visited Global Institute of Sustainability of ASU (hosted by Prof. Marty Anderies and Prof. J. Wu) during October 2008 - March 2009.

4.3 Ph. D Students

- Based on SUCCESS, 2 Ph. D students were enrolled in 2008 and 2009 with Prof. Jianguo Wu and Prof. Xiaochuan Guo as their supervisors.

III. COMMUNICATION AND OUTREACH

1. Website

SUCCESS website was created both in Chinese and English in January 2008. The website includes the following information:

- SUCCESS introduction
- Organization
- Research personnel
- Research projects
- Publications
- SUCCESS news

2. SUCCESS Brochure

The SUCCESS Brochure both in English and Chinese was printed and handed out during Second SUCCESS Forum.

SUCCESS WORK PLAN

(Sept. 2009 – Jan. 2010)

I. BOOK PUBLICATION

Arizona Policy Choices in Chinese version and *Proceedings of the Second SUCEESS Forum on Sustainability Science* will be published.

II. SEMINARS

- SUCCESS seminar series will be continued, each adjunct professor will give presentation every two weeks.
- English seminar attended by graduate students will be held every two weeks.

III. PREPARATION FOR THIRD SUCCESS FORUM

The information on research centers of sustainability science in China will be searched on line for preparation of Third SUCCESS Forum. SUCCESS could be the sponsor of Third SUCCESS Forum while other institutes could also get involved in organizing the forum.

IV. TRAINING

- One leader training program will be started for the purpose of improving the officials from government and enterprises to understand the sustainability science.
- Making efforts to enroll and train students on sustainability science as masters and Ph.D.