ERIC KEMP-BENEDICT

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PROFESSIONAL SUMMARY

Dr. Kemp-Benedict is a Senior Scientist at the Stockholm Environment Institute. His work focuses on sustainable development planning and scenario analysis. Past and current projects include scenario development for the Center for International Forestry Research, the Global Scenario Group, UNEP's Global Environment Outlook, the Comprehensive Assessment of Freshwater in Agriculture, and studies in West Africa, the Baltic Sea, and China.

In his facilitation and capacity-building work, Dr. Kemp-Benedict actively develops and applies tools and methods for participatory and study-specific sustainability analyses. As a scenario modeler, he specializes in the development of application-specific models within a participatory framework.

In addition to scenario analysis and scenario modeling in general, Dr. Kemp-Benedict's particular areas of interest include water, livestock, and land use; poverty and income distribution; and social dynamics.

EDUCATION

Ph.D.	Theoretical Physics, Boston University, Boston, Massachusetts, 1997
B.S.	Physics, University of Texas, Austin, Texas, 1990
M.A.T.	Physics Education, Tufts University, Medford, Massachusetts, 2005
License	Special Education of Students with Moderate Disabilities, Northeastern University, Boston, Massachusetts, 2006

RESEARCH EXPERIENCE

1997-2002 and 2006-present	Stockholm Environment Institute Current position: Senior Scientist. Carry out analyses in support of sustainable development planning at the regional, national, and global level. Develop methodologies for sustainability studies. Facilitate meetings and carry out capacity-building exercises.
2003-2006	Independent Contractor (from 2004-2006, doing business as KB Creative) Carried out policy analysis for sustainable development. Specific tasks included scenario development, quantitative analysis, training, writing, and representing clients at project meetings. Developed open-source software related to consulting work.
1993-1997	Research Assistant, Boston University Department of Physics, Boston, Massachusetts.
1989-1990	Research Assistant, University of Texas Department of Geophysics, Austin, Texas.

TEACHING EXPERIENCE

2002-present	Fenway Pilot High School, Boston Public Schools, Boston, Massachusetts Current position: Teacher of Special Education. Teach science classes for high school students with moderate language-based learning disabilities.
1992-1997	Teaching Assistant, Boston University Department of Physics, Boston, Massachusetts.

SELECTED SOFTWARE PROJECTS AND WEB SITES

IPAT-S Suite (http://www.ipat-s.org/). IPAT-S is an open-source modeling language designed for rapid development, designed especially for sustainability scenarios. It has been used for scenario analyses ranging from regional to global level. The suite consists of the language interpreter, an integrated development environment, an interactive scenario-exploration tool, and a data-manipulation tool.

Scenario Toolkit (http://scentools.sourceforge.net/). The Scenario Toolkit is a collection of open-source and free programs for use in scenario workshops. The programs in the toolkit can be used to help with brainstorming sessions and to organize information..

Scenarios for Sustainability Web Site (http://www.scenariosforsustainability.org/). A source of information on developing scenarios specifically for sustainability analysis. Includes information about scenarios and sustainability in general, as well as sources of open-source and other freely-available tools and data sources.

SELECTED REPORTS AND PUBLICATIONS

"Converting qualitative assessments to quantitative assumptions: Bayes' rule and the pundit's wager". *Technological Forecasting and Social Change*, doi:10.1016/j.techfore.2009.06.008. 2009. Sole Author.

"The Greenhouse Development Rights Framework". *Climate and Development*. 1, 147-165. 2009. Co-Author.

"Bayesian methods for livelihood, water and poverty analysis". Proceedings of the 2nd International Forum on Water and Food, Addis Ababa, Ethiopia, November 10-14, 2008. First Author.

"Using daily rainfall data and IDF curves to estimate the impact of land cover change on rainfall runoff". Proceedings of the 2nd International Forum on Water and Food, Addis Ababa, Ethiopia, November 10-14, 2008. First Author.

The Greenhouse Development Rights Framework: The Right To Development in a Climate Constrained World. Berlin: Heinrich Böll Stiftung. 2008. Co-Author.

"The Akropong Approach to Multi-Sector Project Planning," *Futures* 40, 834-840. 2008. First Author.

"Using Base-Year Data with Empirical Scenario Models," *Technological Forecasting and Social Change*, 75(6), 759-770. 2007. Sole Author.

"Looking Ahead to 2050: Scenarios of Alternative Investment Approaches," Chapter 3 of *Water for Food, Water for Life: A Comprehensive Assessment of Water Management*., synthesis report of the Comprehensive Assessment of Water Management in Agriculture. Earthscan and International Water Management Institute. 2007. Co-Author.

"Global Environment Outlook Scenario Framework: Background Paper for UNEP's Third Global Environmental Outlook Report (GEO-3)," United Nations Environment Program Division of Early Warning and Assessment. 2004. Co-author.

"Agriculture: Re-Adaptation to the Environment," *Issues of Water Management in Agriculture: Compilation of Essays*. Comprehensive Assessment of Water Management in Agriculture Secretariat. 2003. Co-author.

Global Scenario Group Futures: Technical Notes. PoleStar Report no. 9 (updated). 2002. First author.

"Technical Notes on Use of PoleStar for the OECD Environmental Outlook." March 23, 2001. Sole author.

"Rationalisation and Implications of the World Water Scenarios," *World Water Scenarios: Analysis.* Ed. by F.R. Rijbersman. 2000. Co-author.

"Scenarios for the Baltic Sea Region: A Vision of Sustainability," *International Journal of Sustainable Development and World Ecology* 6. 1999. Co-author.

Sustainable Development in West Africa: Beginning the Process. A collaborative study with Environnement et Développement du Tiers-Monde. June 1999. Co-author.

"New Measurement of the Anomalous Magnetic Moment of the Positive Muon," *Physical Review Letters* 82, 1632-1635,1999. Co-author.

"Visions of Sustainability in the Baltic Sea Region: Beyond Conventional Development." Baltic 21 Research Report, 1998. Co-author.

Quantizations of a Dilaton-Gravity Model in (1+1)-Dimensions, Ph.D. Dissertation, 1997.

"Functional Schroedinger and BRST Quantization of (1+1)-Dimensional Gravity," *Physical Review D54*, 6213-6225, 1996. Co-author.

"Entanglement Entropy of Nontrivial States," *Annals of Physics* 245, 209-224. 1996. Co-author.

"A Comparison of Two Quantization Procedures for Lineal Gravity," *Physics Letters* B340, 43-47, 1994. Sole Author.

SELECTED PRESENTATIONS

"Simulation of Water Supply and Demand in the Jordan Valley Region using WEAP21: Initial Results," European Water Resources Association Conference, Limassol, Cyprus, June 2009.

"Converting Qualitative Assessments to Quantitative Assumptions: A Bayesian Approach," XXth World Conference of the World Futures Studies Federation, Trollhättan, Sweden, June-July 2008.

Capacity Building Workshop on the Use of Analytical Tools for the Formulation of National Climate Change Adaptation Strategy, Akropong, Ghana, May 2007. Facilitator.

Workshop on Integrated Analysis and Scenarios, Accra, Ghana, November 2005. Facilitator.

"From Narrative to Number: A Role for Quantitative Models in Scenario Analysis," Conference of the International Environmental Modelling and Software Society, 2004.

Preparation and training for UNEP's GEO-3 Global Environment Outlook (2000-2001). Facilitator and presenter.

Meetings of the Global Scenario Group (1998, Tokyo and 2000, Boston). Presenter.

"Entanglement Entropy of Nontrivial States," LASSF II, Caracas, Venezuela, October 1995.

"Dynamic Redistribution of Oceanic Mass and the Excitation of Polar Motion," Spring Meeting of the American Geophysical Union, Baltimore, Maryland, May 1990.