

Sources and Suggested Reading on Sustainability

Classic & Historic Sustainability

- Brundtland, Gro. “*Healthcare and Development*”, Plenary speech at 8th International Congress of World Federation of Public Health Associations, Arusha, Tanzania, October 13, 1997.
- Cobb, Clifford, Ted Halstead and Jonathan Rowe. “*If the GDP is Up, Why is America Down?*” **The Atlantic Monthly**, October 1995, pp. 2-15.
- Fussler, Claude, Sir Anthony Cleaver, *et.al.* “*The LCA Sourcebook*” SustainAbility and SPOLD, 1993. ISBN 0-9521904-0-0.
- Eissen, Marco, J. O. Metzger, E. Schmidt and U. Schneidewind. “*10 Years after Rio-Concepts on the Contribution of Chemistry to a Sustainable Development*”, **Angew. Chem. Int. Ed.**, **2002**, 41, pp. 414-436.
- Lamb, J.R. and J. W. Oatridge. “Environmental Information Systems – A U.K. Perspective”, AWWA/WEF Joint Conference, Tulsa, Oklahoma. February 1995.
- Magretta, Joan. “*Growth through Global Sustainability: an Interview with Monsanto’s CEO*”, **Harvard Business Rev.**, January-February 1997, pp. 78-88.
- Mattews, Emily. “*Towards a Sustainable Netherlands*” Environmental Resources Management G-Br. and The Netherlands Ministry of Housing, January 1994.
- McClenahan, John S. “*Modest Man, Ambitious Mission*”, **Industry Week**, January 19, 1998, pp. 68-69.
- Riggs, John A. “*The Alternative Path: A Cleaner, Cheaper Way to Protect and Enhance the Environment*”, The Aspen Institute, 1996. ISBN: 0-89843-199-9.
- Riggs, John A. “*Uncovering Value: Integrating Environmental and Financial Performance*”, The Aspen Institute, 1998. ISBN: 0-89843-254-5.

Related to Science, Technology:

1. McMichael A.J., C.D. Butler and C. Folke. “*New Visions for Addressing Sustainability*”, **Science Vol 302**, pp. 1919-1920.
2. Raven, Peter H.. “*Science, Sustainability, and the Human Prospect*”, **Science 297**: pp. 954-958 (2002).
3. Azapagic, Adisa. “Developing a Framework for Sustainable Development Indicators for the Mining and Minerals Industry”, **Journal of Cleaner Production, Volume 12**, Issue 6, (2004), pp. 639-662.
4. Huesemann, M.H.; “The Limits of Technological Solutions to Sustainable Development”, **Clean Technologies and Environmental Policy, 5**, pp. 21-34, (2003).
5. Jin , Y., D. Wang and F. Wei, “The Ecological Perspective in Chemical Engineering”, **Chemical Engineering Science, 59** (8-9) pp. 1885-1995 (2004).
6. Roohk, Bonita L. and Arnold J. Karpoff; “*Introducing Biology*”, Kendall Hunt Publishing Co., 01/01/1992, ISBN: 0840373910, pp. 10, 689 - 728.
7. Verstraete, W. “Environmental Biotechnology for Sustainability”, **Journal of Biotechnology**. 2002 Mar 14; 94(1): pp. 93-100.
8. Rosen, Marc A. and Dincer, Ibrahim., “*Exergy as the Confluence of Energy, Environment and Sustainable Development*”, **Exergy, an International Journal**. 2001; 1(1): pp. 3-13

9. Mader, Sylvia S. "Inquiry into Life", 7th Edition, 1999, McGraw Hill, pp. 74, 650-680, ISBN 0072338253.

10. Pearlstine, Norman. Ed., "Our Precious Planet", **Time Magazine, Vol 150, No. 17A**, November 1997 (Special Issue).

11. Trainham, James A., Committee Chair., "Sustainability in the Chemical Industry", **The National Academies Press**, 2006, ISBN 0-309-09571-9.

12. Mulholland, Kenneth L. "Identification of Cleaner Production Improvement Opportunities" **Wiley-Interscience**, 2006, ISBN 13-978-0-471-79440-0.

Related to Ecosystem:

1. Arrow, K., Bolin, B., Costanza, R., Dasgupta, P., Folke, C., Holling, C.S., Jansson, B-O., Levin, S., Maler, K-G, Perrings, C., Pimental, D., 1995. "Economic Growth, Carrying Capacity, and the Environment". **Science, Vol 268**: pp. 520-521.

2. Ayres, R., "Ecothermodynamics: Economics and the Second Law", **Ecological Economics, 26** (2) pp. 189-209 (1998)

3. Anderies, John M. Institutions, "Ecosystems and Sustainability": Edited by R. Costanza, B.S. Low, E. Ostrom, J. Wilson, Lewis Publishers, 2001. 270 pp.; ISBN 1-56670-389-1.

4. Babbitt, Bruce; Jose Sarukhan and John Riggs (ed.), "Conserving Biodiversity" Aspen Institute, 2005. ISBN: 0-89843-423-8.

5. Jensen, Marina Bergen; B. Persson; S. Guldager; U. Reeh; K. Nilsson. "Green Structure and Sustainability -- Developing a Tool for Local Planning", **Landscape and Urban Planning**. 2000 Dec 25; 52(2-3): pp.117-133.

7. Chapin FS III, MS Torn, and M Tateno. "Principles of Ecosystem Sustainability", **The American Naturalist 148**: pp. 1016-1037 (1996).

8. Liu J, GC Daily, PR Ehrlich and GW Luck. 2003. "Effects of household dynamics on resource consumption and biodiversity." **Nature 421**:530-533.

9. Cabezas, H., Pawlwoski, C.W., Mayer, A.L. N.T. Hoagland, "Sustainability: Ecological, Social, Economic, Technological, and Systems Perspectives," **Clean Technologies and Environmental Policy, 5**, 1-14 (2003).

10. Smith, H. Jesse. "The Shape We're In," **Science, Vol 302**, p. 1171, 14 November 2003.

11. Jenkins, Martin. "Prospects for Biodiversity," **Science, Vol 302**, pp. 1175-1177, 14 November 2003.

12. Gleck, Peter H. "Global Freshwater Resources: Soft-Path Solutions for the 21st Century," **Science, Vol 302**, pp. 1524-1528.

13. Chow, Jeffrey, Raymond J. Kopp and Paul R. Portney. "Energy Resources and Global Development," **Science, Vol 302**, pp. 1528-1531.

14. Karl, Thomas R. and Kevin E. Trenberth. "Modern Global Climate Change," **Science, Vol 302**, pp. 1719-1723, 5 December 2003.
15. Sugden, Andrew, C. Ash, B. Hanson and J. Smith. "Where Do We Go from Here?" **Science, Vol 302**, p. 1906, 12 December 2003.
16. Hasselmann, K., M. Latif, G. Hooss, C. Azar, O. Edenhofer, C. C. Jaeger, O. M. Johannessen, C. Kemfert, M. Welp and A. Wokaun. "The Challenge of Long-Term Climate Change," **Science, Vol 302**, pp.1923-1924, 12 December 2003.
17. Abramovitz, Janet N. "Putting a Value on Nature's 'Free' Services", **World-Watch**, pp. 10 – 21, January/February 1998.
18. Pennisi, Elizabeth. "Respect for Things That Flutter, Creep and Crawl", **Science, Vol 302**, 2 April 2004, p. 27.

Related to Technology and Business Enterprise:

1. McMichael, A.J., C.D. Butler and C. Folke. 2003. "New visions for addressing sustainability". **Science Vol 302**:1919-1920.
2. Raven Peter H. "Science, Sustainability, and the Human Prospect." **Science 297**: pp. 954-958.
3. Adisa Azapagic, "Developing a framework for sustainable development indicators for the mining and minerals industry", **J. Cleaner Production, Vol 12**, Issue 6, August 2004, Pages 639-662.
4. K. Robert (2000) "Tools and concepts for sustainable development, how do they relate to a general framework for sustainable development and to each other?" **J. Cleaner Production, Vol 8**, pp. 243-254.
6. R. J. Batterham "Ten years of sustainability: where do we go from here", **Chemical Engineering Science Vol 58**, pp 2167-2179, 2003
7. Jeanette Schwarz, Beth Beloff, Earl Beaver "Use sustainability metrics to guide decision making" **Chemical Engineering Progress**, pp 58-63, July 2002
8. David R. Shonnard, A. Kicherer, P. Saling "Industrial applications using BASF eco-efficiency analysis: Perspectives on green engineering principles" **Environmental Science & Technology, Vol 37**, no 23, pp 5340-5348, 2003
9. Bakshi, B.R., Fiksel, J.; "The Quest for Sustainability: Challenges for Process Systems Engineering", **AIChE Journal, 49**(6), pp. 1350-1358, 2003.
10. Huesemann, M.H.; "The Limits of Technological Solutions to Sustainable Development", **Clean Technologies and Environmental Policy, 5**, pp. 21-34, 2003.
- 11 Jin , Y., D. Wang and F. Wei, The Ecological Perspective in Chemical Engineering, **Chemical Engineering Science, 59** (8-9) pp. 1885-1995 (2004).
12. Sikdar, S.; "Sustainable Development and Sustainability Metrics", **AIChE Journal, 49**(8), pp. 1928-1932, (2003).

13. Willard, Bob, "The Sustainability Advantage: Seven Business Case Benefits of a Triple Bottom Line." New Society Publishers, 2002. ISBN 0-86571-451-7.

Related to Socio-economics, Policy, Decision Science and Management:

1. Soyka, Peter and S. J. Feldman "Investor Attitudes toward the Value of Corporate Environmentalism", **Environmental Quality Management**, Autumn 1998, CCC1088-1913/98/0801001-10.
2. Oliveira de Paula, Gabriela and R. Negro Cavalcanti, "*Ethics: essence for sustainability*". **Journal of Cleaner Production**. 2000 Apr; 8(2):109-117.
3. Houck, Oliver. "Tales from a Troubled marriage: Science and Law in Environmental Policy," **Science, Vol 302**, pp.1926-1929, 12 December 2003.
4. Watson, Robert T. "Climate Change: The Political Situation," **Science, Vol 302**, pp. 1925-1926, 12 December 2003.
5. Wackernagel M, N. B. Schulz, et.al. "*Tracking the ecological overshoot of the human economy.*" **Proc. National Academy of Sciences, USA 99**: pp. 9266-9271. 2002.
6. S. L. Hart (1997) "Beyond Greening: Strategies for a sustainable world" in **Harvard Business Review** (January-February) pp. 66-76.
7. Anagnostopoulos K, Flamos A, Kagiannas AG, Psarras J. "*The impact of clean development mechanism in achieving sustainable development*". **International Journal of Environment and Pollution**. 21 (1): 1-23, 2004.
8. Ayong Le Kama, Alain D. "*Sustainable growth, renewable resources and pollution*", **Journal of Economic Dynamics and Control**. 2001 Dec; 25(12):1911-1918.
9. Heal G. 1998. "*Valuing the future: Economic Theory and Sustainability*," Columbia University Press, New York.
10. Padilla, Emilio." Intergenerational Equity and Sustainability." **Ecological Economics**. 2002 Apr; 41(1):69-83.
11. Plaut, Jon. "Industrial Management for Sustaining the Environment." **Technology in Society**. 2000 Nov; 22(4):467-475.
12. Asheim G. 1994. Net national product as an indicator of sustainability. **Scand J Econ** 96: 257-265. .
13. Cohen, Joel E. "Human Population; the Next Half Century," **Science, Vol 302**, pp. 1172-1175, 14 November 2003.
14. Pretty, Jules. "Social Capital and the Collective Management of Resources," **Science, Vol 302**, pp. 1912-1914, 12 December 2003.
15. Adams, William M., D. Brockington, J. Dyson and B. Vira. "Managing Tragedies: Understanding Conflict over Common Pool Resources," **Science, Vol 302**, pp. 1915-1916, 12 December 2003.

16. Rosengrant, Mark W. and Sarah A. Cline, "Global Food Security: Challenges and Policies," **Science**, Vol 302, pp. 1917-1919, 12 December 2003.
17. McMichael, A. J., C. D. Butler and Carl Folke. "New Visions for Addressing Sustainability," **Science**, Vol 302, pp.1919-1920, 12 December 2003.
18. Mebratu, Desta, "Sustainability and sustainable development: historical and conceptual review", **Env. Impact Assessment Review**, 1998; 18: pp.493-520.
19. Laszlo, Chris, "The Sustainable Company: How to Create Lasting Value through Social and Environmental Performance," Island Press, 2003, ISBN 1-55963-836-2.
20. Foran, Barney, Manfred Lenzen and Christopher Dey. "*The Balancing Act*" (Volumes 1-5), University of Sydney and CSIRO, 2005.

Related to Urban Planning:

1. Johnston RA, Garry G. "*Sustainable development planning tools - Suite of models useful in large metropolitan regions*". **Transportation Management and Public Policy**. 1848: 132-136, 2003.
2. Parris T. M., Kates R. W. "*Characterizing and measuring sustainable development*". **Annual Review of Environment and Resources**. 28: 559-586, 2003.
3. Ayres, R., "*Ecothermodynamics: economics and the second law*", **Ecological Economics**, 26 (2) pp. 189-209 (1998)
4. Allen, A. "*Containment landfills: the myth of sustainability*". **Engineering Geology**. 2001 Jun; 60(1-4): pp.3-19.
5. Anderies, John M. *Institutions, Ecosystems and Sustainability*: Edited by R. Costanza, B.S. Low, E. Ostrom, J. Wilson, Lewis Publishers, 2001. 270 pp.; ISBN 1-56670-389-1.
6. Bosshard, Andreas. "*A methodology and terminology of sustainability assessment and its perspectives for rural planning*". **Agriculture, Ecosystems & Environment**. 2000 Jan; 77(1-2): pp. 29-41.
7. Brazel, A. J. "*Urban Sustainability in the Context of Global Change*". R.B. Singh (Ed.), Science Publishers, Inc., Enfield, NH, USA; Plymouth, UK, 2001.
8. Guerin, Turlough F. "*Why sustainable innovations are not always adopted*". **Resources, Conservation and Recycling**. 2001 Dec; 34(1): pp.1-18.
9. Jensen, Marina Bergen; Persson, Bengt; Guldager, Susanne; Reeh, Ulrik, and Nilsson, Kjell. Green structure and sustainability -- developing a tool for local planning. **Landscape and Urban Planning**. 2000 Dec 25; 52(2-3): pp.117-133.
10. Liu J., G.C. Daily, P.R. Ehrlich and G.W. Luck. "*Effects of Household Dynamics on Resource Consumption and Biodiversity*". **Nature** 421: pp. 530-533, (2002).

11. Cabezas, H., Pawlwoski, C.W., Mayer, A.L. N.T. Hoagland, "Sustainability: Ecological, Social, Economic, Technological, and Systems Perspectives," **Clean Technologies and Environmental Policy**,

Related to Applications of Sustainability in Industry

5, 1-14 (2003).

12. Smith, H. Jesse. "The Shape We're In," **Science, Vol 302**, p. 1171, 14 November 2003.

13. Jenkins, Martin. "Prospects for Biodiversity," **Science, Vol 302**, pp. 1175-1177, 14 November 2003.

14. Gleck, Peter H. "Global Freshwater Resources: Soft-Path Solutions for the 21st Century," **Science, Vol 302**, pp. 1524-1528.

15. Akimoto, Hajime. "Global Air Quality and Pollution," **Science, Vol 302**, pp. 1716-1719, 5 December 2003.

16. Karl, Thomas R. and Kevin E. Trenberth. "*Modern Global Climate Change*," **Science, Vol 302**, pp. 1719-1723, 5 December 2003.

17. Sugden, Andrew, Caroline Ash, Brooks Hanson and Jesse Smith. "*Where Do We Go from Here?*" **Science, Vol 302**, p. 1906, 12 December 2003.

18. Mendler, Sandra, William Odell and Mary Ann Lazrus. "*The HOK Guidebook to Sustainable Design, Second Edition*" John Wiley & Sons ISBN-13: 978-0-471-69613-11, 2006.

Allenby, B. R. 1999. *Industrial Ecology: Policy Framework and Implementation* (Upper Saddle River, NJ: Prentice-Hall).

Ayres, R. U. and L. W. Ayres, eds. 2002. *A Handbook of Industrial Ecology* (Cheltenham, UK: Edward Elgar).

Bare, J. C. et al. "TRACI: The Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts." **Journal of Industrial Ecology**, 6(3-4), 49-78, (2003).

Beaver, Earl R. "Three New Land Use Metrics to Allow for More Sustainable Decisions on New Plants," **Proceedings of Sustainable Engineering: Sustainability and Life Cycle**, AIChE Annual Meeting, San Francisco, November 2003, pp. 187 -192. ISBN 0-8169-0936-9.

Beaver, Earl R. "A Fresh Approach to Being Sustainable," **Clean Products and Processes, 2 (2000) 76. Springer-Verlag.**

Beaver, Earl "LCA and Total Cost Assessment," **Environmental Progress**, Vol. 19, No. 2, Summer 2000.

Beaver, Earl & Beth Beloff "*Sustainability Indicators and Metrics of Industrial Performance*," **Proceedings of Society of Petroleum Engineers Meeting**, Stavanger, Norway, June 2000.

Beaver, Earl R. "Developing Environmental Technology - Cooperatively" **Chem Tech**, April 1996, Vol. 26, No. 4, pp.9 - 15. ISSN 0009-2703.

Beaver, E. R., et. al. "Designing Pollution Prevention into the Process," Chemical Manufacturers Association, April 1993.

Beloff, Beth, Earl Beaver and Heidi Massin, "Assessing Societal Costs Associated with Environmental Impacts" **Environmental Quality Management Journal**, Winter 2000.

Bowlin, Mike R. "Clean Energy: Preparing Today for Tomorrow's Challenges," presented at Cambridge Energy Research Associates 18th Annual Executive Conference, Houston, TX, 9 February 1999.

Bossel, H. (1999). Indicators for Sustainable Development: Theory, Method, Applications- A Report to the Balaton Group. International Institute for Sustainable Development.

Characklis, G. W. and Richards, D. I. (1999). "The Evolution of Industrial Environmental Performance Metrics: Trends and Challenges." **Corporate Environmental Strategy**, 6(3), 3-13.

Culaba, A. B. and Purvis, M. R. I. (1999). "A Methodology for the Life Cycle and Sustainability Analysis of Manufacturing Processes." **Journal of Cleaner Production**, 7, 435-445.

Eaton, R. J. "Getting the Most Out of Environmental Metrics." *The Bridge*, 29 (1) (1999).

Elkington, John. *Cannibals with Forks: the Triple Bottom Line of 21st Century Business*, New Society Publishers (1997).

Environmental Valuation Reference Summary, <http://www.evri.ec.ca/evri/english/screener/default.cfm>

Goedkoop, M. and Spriensma, R. "The Eco-indicator 99: A Damage Oriented Method for Life Cycle Impact Assessment- Methodology Report." <http://www.pre.nt> (2000).

George, C. "Test for Sustainable Development through Environmental Assessment", **Environmental Impact Assessment Review**, 19, 175-200 (1999).

Government of Manitoba, "Integrating Aboriginal Values into Land-Use and Resource Management," Final Report January 2000 to June 2001, International Institute for Sustainable Development.

Graedel, T. E. and B. R. Allenby. 2003. *Industrial Ecology (2nd ed.)* (Upper Saddle River, NJ: Prentice-Hall). IEEE.

Guinee, J. B. "Handbook on Life Cycle Assessment: Operational Guide to the ISO Standards", Kluwer Academic Publishers, Dordrecht (2002).

Hart, S. L. "Strategies for a Sustainable World", **Harvard Business Review**, Jan-Feb, 67-76 (1997).

Hersh, M. A. "Sustainable Decision Making: The Role of Decision Support Systems", **IEEE Transactions on Systems, Man, and Cybernetics - Part C: Applications and Reviews**, 29 (30), 395-408 (1999).

Holliday, Charles O. Jr., Stephan Schmidheiny and Philip Watts, "Walking the Talk" **The Bath Press**, 2002, ISBN 1-874719-50-0.

ICCA. (2002). *On the Road to Sustainability: A Summary of ICCA Chemical Sector*. A Report to UNEP. <http://www.icca-at-wssd.org/publications.html>.

International Institute of Sustainable Development. "Compendium of Sustainable Development Indicator Initiatives", <http://www.iisd.org/measure/compendium> (2000).

Jin, X and High, K. A. "Towards the Best Practice Environmental Sustainability Metrics for Chemical Engineers: Using a Hierarchical Life Cycle Impact Assessment", **Proceedings of Annual AIChE Meeting**, Nov., 2003a, San Francisco, CA.

Jin, X and High, K. A. "Towards the Current Best Practice Metric for Assessing Environmental Sustainability of Manufacturing Processes", **Proceedings of 7th Annual Green Chemistry and Engineering Conference**, 6/23-6/26, 2003b, Washington, DC.

Kohlhaas, Michael "Ecological Tax Reform in Germany: Impact and Implications," presentation at American Institute for Contemporary German Studies, Washington, DC, 21 April 1999.

Kruijf, H. A. M. De and Vuuren, D. P. V. "Following Sustainable Development in Relation to the North-South Dialogue: Ecosystem Health and Sustainability Indicators", **Ecotoxicology and Environmental Safety**, 40, 4-14 (1998).

Lankey, R. L. and Anastas, P. T. "Life-Cycle Approaches for Assessing Green Chemistry Technologies" **Industrial Engineering Chemistry Research**, 41, 4498-4502, (2002).

Lenz, R., Malkina-Pykh, I. G. and Pykh Y. (2000). Introduction and overview. **Ecological Modelling**, 130, 1-11.

Mankiw, N. Gregory "Gas Tax Now!" **Fortune**, 24 May 1999.

Merkle, A. and Kaupenjohann, M. (2000). *Derivation of Ecosystemic Effect Indicators-Method*. **Ecological Modeling**, 130, pp. 39-46.

Monastersky, Richard "Sea Change in the Arctic," **Science News**, 13 February 1999;

National Academy of Engineering & National Research Council. (1999). *Industrial Environmental Performance Metrics: Challenges and Opportunities*, National Academy Press, Washington D.C.

Network Wizards, "Internet Domain Surveys, 1981-1999," <www.nw.com>.

Parris, T. M. and Kates R W. (2003). Characterizing and Measuring Sustainable Development. *Annual Review in Environment and Resource*, 28, 559-586.

Pearce, Fred "Iceland's Power Game," **New Scientist**, 1 May 1999.

Retoske, Matthew and Earl Beaver, "Climate Change; What Does it Mean to the Process Engineer?" **Environmental Progress**, October 2002.

Schmidheiny, S. (and the Business Council for Sustainable Development). *Changing Course* (Cambridge, MA: The MIT Press) 1992.

Schwarz, Jeanette, Beth Beloff, Earl Beaver and Dickson Tanzil, "*Practical Minimum Energy Requirements for Chemical Product Manufacturing*," **Environmental Quality Management Journal**, Winter 2001.

Schwarz, Jeanette, Beth Beloff and Earl Beaver, "*Use Sustainability Metrics to Guide Decision-Making*," **Chemical Engineering Progress**, July 2002.

Smith, Ethan T. and Harry X. Zhang, "*How do we know it's Sustainable?*" **Water & Environment Technology**, June 2004, pp. 37 – 41.

Stevens, William K. "*Dead Trees and Shriveling Glaciers as Alaska Melts*," **New York Times**, 18 August 1998.

Stout, David "Justice Dept. Plans Tobacco Suit Seeking Billions in Health Costs," **New York Times**, 22 September 1999.

Watkins, K. J. "*Sustainability Takes Center Stage*", **Chemical & Engineering News**, 80(16), 15-22 (2002).

Wenzel, H. et al. (1997). *Environmental Assessment of Products*. v. 1 & 2. Chapman & Hall, London.

Willard, Bob "*The Next Sustainability Wave*" **New Society Publishers**, 2005, ISBN 0-86571-532-7.

World Commission on Environment and Development (also known as the Brundtland Commission). 1987. "*Our Common Future*" (Oxford: Oxford University Press).

Earl R Beaver – March 9, 2006.