

Frontiers of Sustainability

Topics in Environmental Studies
University of Redlands, Spring 2016

EVST 360-01
T&Th, 9:30-10:50 a.m.
Classroom: Lewis 111

Dr. Monty Hempel, Lewis 140
Office hours: M-Th 11-12, 1-2
and by appt., ext. 8589
E-mail: hempel@redlands.edu

LEARNING OBJECTIVES

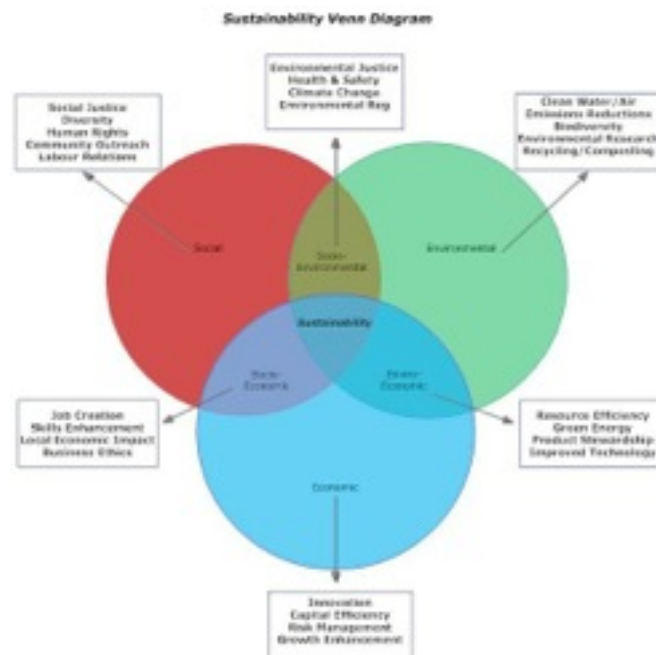
Education for sustainability is ultimately about what we leave future generations in the way of healthy ecosystems, socially just institutions, strong economies, great art, vibrant communities, and challenges worthy of a highly educated society. It represents our collective bequest to tomorrow's children, as well as our moral obligation to secure life in the present – both human and nonhuman – by striving for a world that is green, prosperous, fair, and inspirational. Sustainability requires “braided” learning about environmental quality, economic vitality, and social equity – the 3 “E”s. As such, it is a powerful force for synthesis, weaving together science, ethics, policy, management, poetry, and many other fields in the pursuit of knowledge that *sustains* living systems. Specific learning objectives for students in this course include the abilities to:

- (1) integrate knowledge about the environmental, economic, and social aspects of sustainability;
- (2) apply sustainability concepts to major issues and challenges that will affect people and ecosystems, now and in the future;
- (3) explore and blend disciplinary and interdisciplinary approaches to learning about sustainability;
- (4) recognize the roles and limitations of science, technology, policy, management, ethics, and culture in framing sustainability issues and responses;
- (5) compare and contrast proposed sustainability solutions, while developing appropriate evaluation criteria for deciding which strategies are most promising, over different scales of time and space;
- (6) apply sustainability ideas to the student's particular areas of interest and specialization;
- (7) engage in research and analysis of case studies about corporate, campus, and community sustainability ...and hopefully learn how you can contribute to the development of a better world.

REQUIRED TEXTS

1. James Farrell, *THE NATURE OF COLLEGE* (Minneapolis, MN, Milkweed Editions, 2010).
2. Worldwatch Institute, *STATE OF THE WORLD 2015: CONFRONTING HIDDEN THREATS TO SUSTAINABILITY* (Island Press 2015).
3. Andres Edwards, *THE HEART OF SUSTAINABILITY: RESTORING ECOLOGICAL BALANCE FROM THE INSIDE OUT* (New Society Publishers, 2015).

Additional readings, some assigned, some only recommended, will be available on the class Moodle site. Recommended E-book: Tom Theis and Jonathan Tompkin, eds., *Sustainability: A Comprehensive Foundation* (2012)



COURSE REQUIREMENTS

(1) Paper #1 – Personal Sustainability Assessment. Evaluate the sustainability of your own lifestyle and consumption patterns, identifying specific strengths and weaknesses. Draw ideas and possible approaches from the James Farrell text, *The Nature of College*. Only a short paper is desired (about 3 single-spaced pages, 1-inch margins, 12 pt. font), so take the time to write concisely and concretely, supporting your arguments with specific observations or evidence you have drawn from personal experience and research. ***Due February 25***

(2) Oral Report on Solutions. Each student will be part of a two- or three-person team assigned to report orally on a “sustainable solution” chosen by them from the “Sustainia 100” solutions identified on the Sustainia website: www.sustainia.me/solutions. There are four annual collections to choose from (2012-2015), yielding a total of about 400 strategies, practices, programs, policies, technologies, and behavior changes that could contribute to sustainability somewhere in the world. The desired length of the report is no more than 10 minutes (just enough time to summarize the idea behind the “solution” and explain some of its advantages and disadvantages. Your job is **not** to cover every minute detail but to focus on what makes the proposed solution interesting or promising, and perhaps transferable to other places and situations. (Scheduled in class, using sign-up sheets)

(3) Pop Quiz on assigned readings (short answers written in class, without time pressure) TBD Feb. or March.

(3) Paper #2 – Critique of Corporate or Campus Sustainability Plan. Write a critique of a selected university’s or corporation’s sustainability plan or annual report. A large sample of plans and reports are on the class Moodle site. Build specific arguments about both strengths and weaknesses you see in the organization’s operations, facilities, planning, employee or student culture, current policy and practices, products, or any aspect of sustainability on which you choose to focus. Aim for ~4 single-spaced pages/12 pt font/1-inch margins. Be sure to cite sources and include explanatory footnotes, if needed. Think of yourself as a sustainability consultant who has been asked to evaluate the sustainability efforts of the chosen business or academic organization. *What is working? What’s left out or inadequately addressed?* ***Due March 31***

(4) Final Exam – in-class exam consisting of short essay, short answer (e.g., lists and phrases), and multiple choice questions (*no notes, books, or earphones allowed during exam*) Wednesday, ***April 18, at 3 p.m..***

GRADING (*percent of course grade is approximate because class participation is considered in final calculation*)

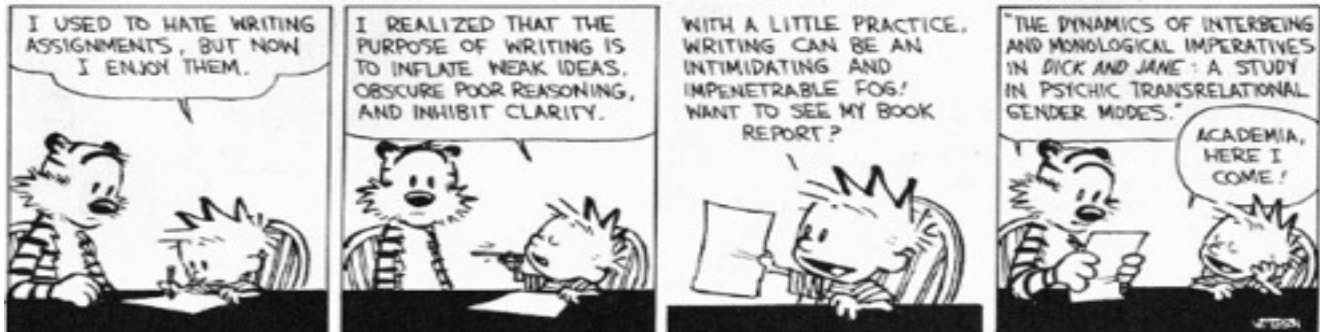
Personal Sustainability Paper.....	~20 %
Oral Report	~10 %
Pop Quiz on Readings.....	~10 %
Sustainability Plan Critique.....	~30 %
Final Exam	~30 %

Instructor’s Approach to Grading

GRADE	Criteria (partial list)
3.7 - 4.0 (A-, A)	Demonstrates in-depth understanding of the subject matter through excellent papers, exams, and class participation; clear evidence of originality and hard work; exceptional insight and critical thinking skills; deeply engaged in subject and committed to learning beyond what is needed to prepare for tests.
3.0 -3.3 (B, B+)	Good but not exceptional understanding of key topics; demonstrates attention to detail and thorough grasp of material in papers and exams; some evidence of effort to move beyond the material covered in course lectures, readings, and paper writing assignments; demonstrates ability to analyze and synthesize.
2.3 - 2.8 (C+, B-)	Significant but still incomplete understanding of the subject; modest effort to master material and surpass minimal standards; keeps up with assignments but nothing more.; evidence of analytical and synthetic abilities is weak or lacking.
1.7 - 2.0 (C-, C)	Evidence of partial understanding but little ability to connect ideas or complete assignments with adequate arguments and insight.; no attempt to go beyond the material presented in class; no passion for learning about this subject. (1.7 is cause for academic concern.)
0.7 - 1.3 (help!)	No evidence of serious effort or achievement in learning; a poor but passing performance that raises serious doubts about the student’s academic viability in this field and, probably, at this university.
0 (Fail!)	Disaster in performance, attendance, or completion of assignments.

Writing Skills: Start writing papers at least a full week before they are due. Use section and subsection headings to help organize your content. Good papers build arguments and evidence. Develop your own arguments; don't just describe what others have said. **Remember, I would much rather read rough but authentic sentences and paragraphs written entirely in your own words than polished, closely paraphrased blocks of text extracted from the writings of others.** Using such copy-paste-modify text blocks is tantamount to plagiarism (see section on *academic integrity*, below).

Work hard to improve your writing in this course. Critically read – and proof read – your papers!



Academic Integrity: Cheating on an exam and plagiarism of a paper are serious offenses, as stated in the University of Redlands policy on academic honesty (see relevant section in the current Catalog).

Plagiarism is the portrayal of someone else's work as your own. An example would be presenting a specific statement or idea you copied from another person without giving them credit, or copying text verbatim without using quotation marks (even when you cite the source). Paraphrasing closely a large block of text, while citing the source, will be regarded as "soft" plagiarism in this course. You should avoid quoting more than a few sentences at a time directly from your sources. The source of statements that are in quotes must be cited. NEVER develop your papers by assembling sections of text (cited or not) from on-line sources and then merely changing words around to avoid having to use quotation marks. Most descriptions, themes, and arguments should be developed in your own words, but even then remember to cite any studies from which you have discovered or developed specific ideas, approaches, data and results.

Research Skills: Knowing how to use Google or some other Internet search engine to find information for use in developing your arguments is very helpful but it is **NOT** a substitute for genuine research, which requires that you evaluate the quality of any information sources and ideas that you discover. Many sources of web-based information are notoriously unreliable. Books and journals in the library that have withstood the quality review processes of science and professional societies are usually preferable, but even here you must be careful to separate fact and opinion, where possible, and to avoid selecting information sources entirely on the basis of your own preconceived notions of the subject being researched.

Late Assignments: I deduct 1/3 of an assignment's grade for each unexcused late assignment (1/3 grade per day). Hence, a "B" (3.0) paper that is one day late would receive a B- (2.7).

Class Attendance: **Students are expected to attend class regularly and to arrive on time.** My policy is *no questions asked or demerits given for one unexcused absence*. However, additional unexcused absences will be considered in the calculation of final grades, with point deductions based on the number of absences and any extenuating circumstances involved.

Class Discussion: I strongly encourage students to participate in asking questions, offering comments, and raising issues in class that are germane to the topic of discussion, **giving everyone else a chance to do the same**. The quality of student participation (*not* quantity) in class discussions will be considered in your grade. It is vital that discussion reflect informed opinion and knowledge, which means that the amount of discussion taking place in this class will be related to the amount of preparation students make in reading and thinking about the material to be discussed. The less prepared you are; the more class time will be devoted to my presentations. Do yourself a favor: **prepare for class in order to prevent me from talking too much!**

Courtesy: Turn off cellphones when in class. Use of electronic tablets or laptops for notetaking during class is allowed in very limited circumstances (personal web surfing, work for other classes, and texting in class is **NOT** allowed). **Lack of attentiveness to material being presented in class will be taken as a sign of rudeness and disrespect.** Always try to arrive on time. **Avoid distracting behavior** – e.g., avoid private conversations during class, walking in or out of class during presentations, or "packing up" several minutes before the class is scheduled to end. Fight the urge to let your mind wander! Avoid dominating class discussions and denying others a chance to contribute. Treat everyone with respect, regardless of how much you may disagree with what others say in class. **Come prepared and be open to new ideas!**

Physical and Learning Disabilities: I am committed to helping any student with verified disabilities to succeed in my classes by providing reasonable accommodations for class meetings, assignments, communication outside of class, and exams.

GENERAL GRADING GUIDE FOR PAPERS

(Use this guide to prepare papers and to review drafts before submitting final papers)

“A” papers are characterized by the following:

1. Originality of thought and effectiveness of expression (insightful, creative, and easy to follow)
2. Logical development of a central idea, with a strong blend of analysis and synthesis. Arguments build impressively.
3. Excellent organization of the paper, including section headings and subheadings, where needed.
4. Use of evidence and support for central idea is clear, concise, and compelling, with very effective use of examples, illustrations, and, if needed, background trends (graphs, tables, diagrams, etc.).
5. Sentences and paragraphs are well crafted in construction and efficient in rhetorical impact.
6. No significant deficiencies in spelling, punctuation, structure and usage.

“B+/A-“ papers are characterized by the following:

1. Logical development of a central idea, with some flashes of insight and creativity.
2. Effective organization of the paper, including section headings and subheadings, where needed.
3. Good support of central idea, with appropriate use of examples, illustrations, and background context.
4. Sentences and paragraphs logically constructed and organized.
5. Diction (choice of words) is appropriate and lively.
6. No major deficiencies in spelling, punctuation, structure, and usage.

“B” papers are characterized by the following:

1. Develops a central idea with adequate support.
2. Organization of the whole paper is acceptable, but not very clear, despite headings.
3. Sentences and paragraphs satisfactorily constructed and organized.
4. Word choice is mostly appropriate and effective.
5. Gross errors in spelling, punctuation, structure, and usage are not excessive.*
6. May lack originality in content and expression but is informative and shows research.

“C” papers are characterized by the following:

1. Acceptable development of a central idea, but not always logical or effective.
2. Fair to poor organization of paper and main arguments.
3. Does not demonstrate careful research or extensive thought (mostly descriptive).
4. Lack of logic and clarity in sentence structure and paragraph organization.
5. Word choice is sometimes lame and ineffective.
6. Gross errors in spelling, punctuation, structure, and usage.*

“D/F” papers are characterized by the following:

1. Failure to develop a central idea (paper often shows no evidence of serious effort).
2. Organization of paper and arguments is poor to unacceptable.
3. Sentences and paragraphs are poorly constructed and organized.
4. Word choice is often inappropriate and ineffective.
5. Excessive errors in spelling, punctuation, structure, and usage.*

*Non-native English writers are given special consideration.

Adapted from Frank J. D'Angelo, *Process and Thought in Composition*, Teacher's Manual, (Winthrop Publishers, 1976), pp. 10-11.

INTERNET LEARNING AND RESEARCH

In addition to reading in the texts, students will be asked to check out selected web sites for readings and information identified by the instructor in class. Many of these sites will also prove to be useful for preparing discussions and papers.

SUSTAINABILITY WEB SITES (A sample)

Association for the Advancement of Sustainability in Higher Education (AASHE): www.aashe.org

Blue Planet United: www.blueplanetunited.org

California Student Sustainability Association: <http://www.sustainabilitycoalition.org/>

Center for the Advancement of a Steady State Economy (CASSE): <http://steadystate.org/>

Global Environmental Management Initiative (GEMI): www.gemi.org/

Global Justice Movement: <http://www.globaljusticemovement.net/>

Global Reporting Initiative (sustainability data): www.globalsustainability.org/

Global Eco-village Network/Gaia Trust (Denmark): www.gaia.org/

Grist: <http://grist.org>

International Institute for Sustainable Development (IISD): www.iisd.org/

Redlands Sustainability Network (RSN): www.sustainableredlands.org

Resilience Alliance: www.resalliance.org/ (see, also, Resilience Science: <http://rs.resalliance.org/>)

Sustainable Communities Online: www.sustainable.org/

SustainAbility (consulting): www.sustainability.com/team

SustainableABC (Architecture/Building/Culture): www.gaia.org/

Sustainia: <http://www.sustainia.me/solutions/>

Unilever Sustainable Living Project: <http://www.unileverusa.com/sustainable-living/>

United Nations - Sustainable Development: <http://www.un.org/sustainabledevelopment/>

Visualizing sustainability: <http://computingforsustainability.com/2009/03/15/visualising-sustainability/>

World Business Council for Sustainable Development (WBCSD): www.wbcsd.org

World Resources Institute: <http://www.wri.org>

WorldWatch Institute: www.worldwatch.org/

350 Organization (Bill McKibben): www.350.org

ASSIGNED READING SCHEDULE

(Readings for each week are organized below, roughly in order of priority for Tuesday, then Thursday sessions. Some of the readings below are recommended, only; others will be designated as required and eligible for inclusion in exams.)

Week, Date, and Class #	TOPICS	REQUIRED READINGS <i>To be read prior to class meeting</i>	MOODLE Items	OTHER Web Sites, Due dates, etc.
Week 1 Jan. 12&14 Class 1&2	CONCEPTS & DEFINITIONS <ul style="list-style-type: none"> • Frameworks • Evolving ideas • The 3 “E’s” • Historical Context 	Skim texts to see organization of contents WORLDWATCH: Chpt. 1 COLLEGE: Prelude (ix-xiii); Introduction (pp. 3-11)	Charles Kidd, “Evolution of Sustainability”	“Definitions” on Moodle; Kuhlman&Farrington, “What is Sustainability?”
Week 2 Jan. 19&21 Class 3&4	LIMITS TO GROWTH? <ul style="list-style-type: none"> • Sustainability Test • Sustainable Develop. • Human Population • Indiv. Consumption • Jo & Joe College lifestyle: Waking up	WORLDWATCH: Chpt. 2 Kates et al, <i>What is Sustainable Development?</i> (Moodle) COLLEGE: Chpt. 1 Al Bartlett, “The Meaning of Sustainability” (Moodle)	Djalali & Vollaard, “Complex History of Sustainability” Brundtland Comm., “Our CommonFuture”	21st Hempel film: <i>The 8th Billion</i> Check out the Sustainia site: http://www.sustainia.me
Week 3 Jan. 26&28 Class 5&6	GREEN GROWTH? <ul style="list-style-type: none"> • Decoupling growth? • Stranded Assets • Economic Factors lifestyle: More Stuff	WORLDWATCH: Chpt. 3 COLLEGE: Chpt. 2 Robert Solow, <i>Sustainability: An Economist’s Perspective</i> (Moodle) WORLDWATCH: Chpt. 4	EIRISS, Sustainability Ratings Prugh&Assadourian, “What is Sustainability, Anyway?”	Check out: www.aashe.org 28th Short Film by Annie Leonard : <i>The Story of Stuff</i>
Week 4 Feb. 2&4 Class 7&8	SUSTAINABLE FOOD <ul style="list-style-type: none"> • Agricultural Futures • Feeding 9 billion • Low Carbon Diet Lifestyle: Diet	WORLDWATCH: Chpt. 5 WRI, <i>Creating a Sustainable Food Future</i> (Moodle): exec. summary, scan the rest COLLEGE: Chpt. 4	David Orr, “Four Challenges of Sustainability” WRI, “Sustainable Food Future”	Check out: http://www.pandopopulus.com
Week 5 Feb. 9&11 C l a s s 9&10	SUSTAINABLE OCEAN and CLIMATE SYSTEM <ul style="list-style-type: none"> • Fisheries • Ecosystems • Climate Disruption • Polar Impacts lifestyle: Clothes	WORLDWATCH: Chpt. 6 COLLEGE: Chpt. 3 <i>Climate Change: Evidence & Causes</i> (Moodle) WORLDWATCH: Chpt. 7	Global Ocean Commission, “From Decline to Recovery: A Rescue Package”	James Balog - check out EIS: http://extremeicesurvey.org 11 th Hempel film: <i>Between Two Worlds</i>
Week 6 Feb. 16&18 Class 11&12	URBAN DESIGN & TRANSPORTATION <ul style="list-style-type: none"> • Sustain. Communities • LA and other cities lifestyle: Cars	EPA, <i>Planning for a Sustainable Future</i> (Moodle) COLLEGE: Chpt. 5 <i>LA Sustainability Plan</i> (Moodle)	Hempel, <i>Sustainable Communities: From Vision to Action</i> (Moodle)	18 th Hempel film clip: <i>Sustainability: Changing the Operating System</i>
Week 7 Feb. 23&25 Class 13&14	ENERGY & WATER <ul style="list-style-type: none"> • Sustainable Energy • Energy Efficiency • World Water Issues • Energy-Water Nexus lifestyle: Screen time	Jacobson&Delucchi, <i>[Energy] Plan for a Sustainable Future</i> (Moodle) COLLEGE: Chpt. 6 UN, <i>Water for a Sustainable World</i> (Moodle)	MAHB, 40 Sustainability Needs MacKay, <i>Sustainable Energy</i>	Personal Assessment Paper due Feb. 25

Week 8 Feb 29 to Mar. 6		SPRING BREAK (but leave a little time to review past readings and read new assignment)		
Week 9 March 8&10 C l a s s 15&16	WILDCARDS! <ul style="list-style-type: none"> • Pandemics • Migration • Terrorism & WMD • Economic Collapse • Interlocking Eco-Crises lifestyle: Party!	WORLDWATCH: Chpt. 8 COLLEGE: Chpt. 7 WORLDWATCH: Chpt. 9	Viederman, “A Sustainable Society” Ophuls, “Sustainability and Complexity”	Hempel film clip, “Erosion of Life”
Week 10 March 15&17 Class 17&18	CORPORATE SUSTAINABILITY <ul style="list-style-type: none"> • Business Leaders • Consumer Expectations • Globalization • Sustn. Indicators lifestyle: Love & Sex	WORLDWATCH: Chpt. 10 COLLEGE: Chpt. 8 Nielsen, <i>Global Sustainability Survey</i> (Moodle) Viederman, <i>A Sustainable Society</i>	Hempel: “Sustainability” Richard Howarth, “Operational Sustainability”	Dozens of corporate sustainability reports are available on-line. I’ve placed about 10 of them on our Moodle site.
Week 11 March 22&24 C l a s s 19&20	CONSUMER vs. CITIZEN vs. PARENT <ul style="list-style-type: none"> • Lifestyles • Moral Choices • “Heroes Journey” • Inner Sustainability lifestyle: Politics	Edwards, Chpt. 1 COLLEGE: Chpt. 10 Edwards, Chpt. 2	Hempel: “Ecoliteracy” SolidWorks, “Guide to Sustainable Design”	Check out Andres Edwards, http://www.andresedwards.com
Week 12 Mar. 29& 31 C l a s s 21&22	PURPOSE & MEANING <ul style="list-style-type: none"> • Quality of Life • “E’s” and “C’s” • Reconnecting to Ourselves & Nature lifestyle: Purpose	Edwards, Chpt. 3 COLLEGE: Chpt. 11 Edwards, Chpt. 4	Nat’l. Assoc. of Scholars – a rightwing critique of sustainability	Sustainability Plan Critique (paper) due March 31
Week 13 April 5&7 C l a s s 23&24	SOCIAL CHANGE <ul style="list-style-type: none"> • Activism • Social Movements • Mental Models • Spiritual Dimension lifestyle: Religion	Edwards, Chpt. 5 COLLEGE: Chpt. 9 Edwards, Chpt. 6	Carl Folke, Resilience Paul Kingsnorth, “Uncivilization”	Check out Global Justice Movement: http://www.globaljusticemovement.net
Week 14 April 12&14 Class 25&26	CONNECTING DOTS <ul style="list-style-type: none"> • Resilience • Intervention Points • Empathy & Nature • Vision • Future Paths REVIEW	Edwards, Chpt. 7 Edwards, Chpt. 8 Review Previously Assigned Readings	Timothy Luke, “Politics of True Convenience”	Check out Resilience Alliance: http://www.globaljusticemovement.net
April 18	FINAL EXAM: 3 p.m., Monday			FINAL EXAM

THE SUSTAINABILITY TEST

by Monty Hempel

32 Criteria for Assessing Sustainability in Decision Making

(Goal: one or more of these should be advanced without causing significant regress in any of the others)

Does a proposed plan, policy, program or practice:

General Objectives (ideals)

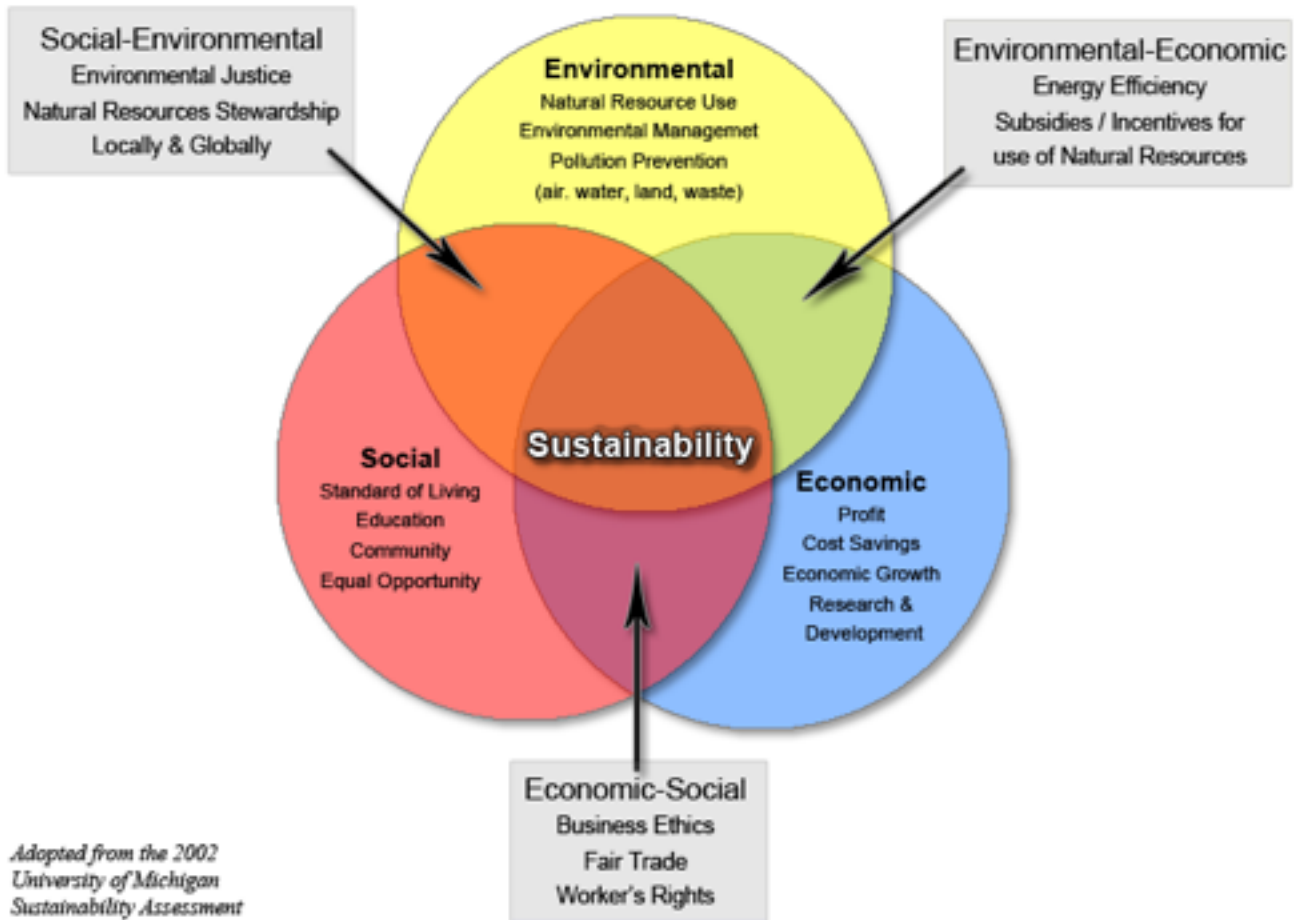
1. Advance the welfare of people **and** ecosystems, co-evolving through time?
2. Provide economic vitality and security for those most in need?
3. Stop the export of problems to other peoples, places, or times?
4. Strike a balance between national pride, global citizenship, and local self reliance (“glocal” thinking)?
5. Reform financial incentive structures that enable greed, domination, and exploitation?
6. Promote just, participatory, prosperous, and peaceful institutions and livelihoods?
7. Reflect whole systems thinking and informed, democratic decision making?
8. Redefine progress in ways that emphasize art and learning, over technology?
9. Help build a green economy that operates with efficiency, within a culture of sufficiency?
10. Restore damaged people, communities, cultures, and natural areas to life with dignity?
11. Avoid making byproducts, waste, or pollution that exceed Nature’s assimilative capacity?
12. Encourage glocal connections and local solutions that harness the power of diversity?
13. Recognize the resilience, and limitations of resilience, in natural systems?
14. Recognize the resilience, and limitations of resilience, in human social systems?
15. Communicate knowledge, skills, and values necessary for a sustainable way of life?
16. Leave a legacy or bequest to future generations that helps us feel good about ourselves?
17. Create opportunities and values that help us discover the purpose of our lives?

Specific Objectives

18. Increase the earth’s tree cover and enlarge, restore, and strengthen protected natural areas?
19. Champion efforts to achieve equity in gender, race, and social background?
20. Help to voluntarily stabilize human population and promote small, happy families?
21. Aid development of wholesome food production systems at appropriate scales for a stabilized population?
22. Accelerate the transition to clean and renewable energy sources and systems?
23. Support the aims of living wage and progressive tax and tax shifting reforms?
24. Secure for future generations the opportunity to experience wildlife in their native habitat?
25. Conserve and provide access to fresh water, topsoil, and other essential natural resources through land reform, regenerative design, and protection of common property?
26. Reinvigorate participatory democracy through campaign finance reform and fair redistricting?
27. Encourage appropriate use of durable, recycled, and reusable materials?
28. Defend and restore coral reefs and contribute to the recovery of a healthy ocean?
29. Prepare communities for adaptation to climate disruption and extreme weather events?
30. Maintain or enhance biodiversity and the value of unpriced ecosystem services?
31. Preserve wild space, open space, and the common heritage of outer space?
32. Address the concentration of wealth and power in financial institutions and industries that benefit greatly from unsustainable practices and products?

Environmental, economic, and social policies, as presently conceived, are resulting in a rapid decline of ecosystem health, social equity, and economic resilience, each of which is required to sustain our quality of life. A new public consensus is needed – one that starts with some very basic insights: a world that works for everyone will be green, prosperous, fair, and inspirational. It will encourage development of thriving communities and lifelong learning, while preserving opportunities for future generations to secure their own quality of life. The future we create will *not* be based on models of governance, development, or education that prevailed in the 19th and 20th centuries. It will instead arise from growing awareness of interdependence and from the recognition that any world worth inheriting by our children will have to achieve and retain quality of life *in community* without diminishing the quality of life enjoyed by other communities, now and in the future

The Three Spheres of Sustainability



Adopted from the 2002
 University of Michigan
 Sustainability Assessment

