

my community, **community,** *OUR* earth

Instructor Guide
and Project Resources



GEOGRAPHIC LEARNING
for Sustainable Development



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Introduction

The National Geographic Society, the Association of American Geographers, the United Nations Environment Programme (UNEP), ESRI, and other organizations are inviting secondary school and university students worldwide to create projects that use the methods and tools of geography to show how their communities are changing and how they can be made more sustainable. The students engaged in these projects will play an important role in determining how citizens in communities (neighborhoods, villages, watersheds, ecoregions, cities, and countries) can improve quality of life and make wise use of the resources of our earth. Each of these communities represents a different geography in which your students live, and the solutions for sustainable development are as varied as each of these geographies. Whether they live in a large city in an arid climate or a small village in an arctic climate, it is vital that your students understand the environmental and social issues related to making their communities sustainable.

Sustainable development is defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Therefore, sustainable development impacts the lives of your students both today and in the future. It involves the interaction between all aspects of the society and environment, from health and poverty to water management and deforestation. For example, consider how water may impact the lives of your students—it impacts human health, wastewater management, crop irrigation, flooding, recreation, drought, hydroelectric power, and so on. As instructors, you have the opportunity to challenge your students to understand these interactions and to help them develop solutions for sustainable development in their own communities.

Objectives of MyCOE

There are four principal objectives to the My Community, Our Earth (MyCOE) project.

- Give students a medium in which to learn about and present current sustainable development issues to international leaders.
- Raise awareness internationally of the importance of geography and geographic information system (GIS) technology in dealing with issues of sustainable development.
- Present the students' projects using maps, images, and graphs at international venues in 2002 and 2003 such as the World Summit on Sustainable Development (WSSD).
- Demonstrate the power of geography and GIS to participants at WSSD and interested individuals worldwide via the Internet and at other venues.

World Summit for Sustainable Development

The World Summit for Sustainable Development is to be held in Johannesburg, South Africa, from August–September 2002. The WSSD will involve an estimated 28,000 delegates from around the globe meeting to determine how the future will be shaped through understanding the current social and environmental trends, documenting best practices, and finding new solutions for sustainability. Ten years ago in 1992, the Earth Summit took place in Rio de Janeiro, Brazil. WSSD is the Rio+10 conference, and the leaders of the world will be meeting to take stock of progress made since Rio.

All the student projects that are submitted will be showcased on the My Community, Our Earth Web site (www.geography.org/sustainable) and linked to many others. The best projects will also be displayed at WSSD and other international venues from July 2002–2003, where decision makers and professionals involved with sustainable development can review the solutions developed by the students. This is a chance for your students to share their visions for our earth with the leaders of the world.

Geography and Sustainable Development

The MyCOE sustainable development themes were selected from the 40-chapter programme of actions developed at the 1992 Earth Summit in Rio de Janeiro, Brazil. These 40 chapters were a major outcome from the Rio summit and are referred to as "Agenda 21," the environmental and sustainable development issues that need to be addressed in the 21st century. The 11 themes highlighted in this project are provided to foster ideas by students and institutions of higher learning. The themes are

- Biodiversity
- Climate Change
- Deforestation
- Environmental Pollution
- Food Production
- Freshwater Supply
- Health and Disease
- Mountain Development
- Poverty Reduction
- Rural Development
- Urbanization

Students at the secondary school and university levels are invited to create geography-oriented projects around one of these themes. Issues from a local, regional, or national scale can be examined, with the emphasis on using geographic analysis to identify viable solutions for sustainability. Whether using digital tools such as GIS software or more traditional manual methods such as hand-drawn maps and charts to complete the project, your students can participate in this geographic learning experience.

The MyCOE Student Guidebook in the MyCOE Resource Kit includes definitions for each theme, a methodology to follow for analyzing a theme geographically, a primer on GIS, suggested readings, case studies, and a glossary of relevant terms. This is the primary resource for your students to use for this project.

The methodology created by Michael Goodchild, Ph.D., a professor of geography at the University of California, Santa Barbara, for analyzing an issue geographically is outlined in the MyCOE Student Guidebook. Please review this with your students, as it will be valuable knowledge as they start their MyCOE projects. Dr. Goodchild's methodology, "Stages of Problem Solving," is illustrated below.

Stages of Problem Solving

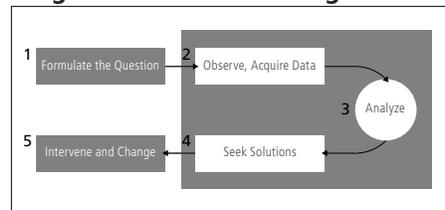


Diagram courtesy Michael Goodchild, UCSB

Mentors to Help Your Students

Several hundred sustainable development, GIS, and geography professionals have already registered to help your students complete their projects. Enclosed in the resource kit is a listing of the mentors who have already registered in your country. You can also search on the MyCOE Web site for additional mentors or for those who registered after you received your resource kit.

This is a unique opportunity for your students to establish mentoring relationships with professionals who have expertise in the area that your students are exploring. With increased global communications, students and mentors can communicate in person, via e-mail, post, or fax. Be creative and build a new sustainable development community with someone in your own geography or someone in another part of the globe.

Please note: ALL meetings between mentors and students under the age of 18 should involve the presence of an instructor or parent.

The MyCOE Resource Kit

The organizers and sponsors of MyCOE have assembled a set of quality resources to help students develop their projects. The MyCOE Resource Kit includes the following materials (as appropriate for your geography and educational level):

My Community, Our Earth Booklet
MyCOE Organizers

Instructor Guide
MyCOE Organizers

Mentor List
MyCOE Organizers

GIS for Everyone Book
ESRI

GIS for Schools Book
ESRI

ESRI Guide to GIS Analysis Book
ESRI

Higher Education CD
ESRI

Schools & Libraries CD
ESRI

ArcView 3.2a Evaluation CD
ESRI

ARGWorld Samples
Association of American Geographers (AAG)

ARGUS CD and Flyer
AAG

World Map
National Geographic Society (NGS)

Pachamama Book (limited availability)
UNEP

Youth and Sustainable Consumption Handbook
UNEP

Solar Calculator
ESRI Business Information Solutions (EBIS)

Mylar Sheets and Set of Four Pens
3M

KIDS COUNT International Data Sheet
Population Reference Bureau (PRB)

Geography of Hope Workbook
U.S. Department of Agriculture (USDA)

Project Submission Guidelines

Projects must be submitted by May 31, 2002.

Submission Format and Content

The submitted project must contain at least one map and a two- or three-page written description of the project. The written description must include background on the geography of the area being studied and a summary of your work. The map(s) and written description of the project will be used for posting the work of selected projects on the MyCOE Web site and for presentation at international meetings. Maps may be digital (e.g., GIS maps) or hand drawn but should clearly show all information. Supplemental, longer descriptions are encouraged, but only the maps and the two- to three-page summaries will be used in the project displays and Web sites featuring the projects. See Awards for more information on display opportunities. Project submission guidelines are summarized below.

- **Content:** Projects should share common structural elements: two- to three-page summary statement (required); hand-drawn, printed, or electronic map as centerpiece (required); list of proposed actions or solutions (required); supplemental essay or text (optional); photographs, field observations, and other elements (optional); and bibliography (optional).
- **Format:** Projects can be submitted either online or in hard-copy format.
- **Timeframe:** Students should examine change over time and look forward into the future—What was my community like 10, 20, 25 years ago? How has it changed since then? What is it like today? How can it be made more sustainable over the next 10 years?
- **Scale:** Students can choose an area around their homes and classrooms to study—neighborhood, village, town/city, county/township/district, state/province, nation, watershed, or ecoregion.

Resources Available

Many resources are available for students and schools developing a MyCOE project. Such resources range from Web sites and geographic data to books, instructional materials, and example projects. Resources are listed at www.geography.org/sustainable/resources.

Resource Kits

Resource kits containing educational materials on geography, GIS, and sustainable development will be available for the first 3,000 participants who register their projects. One resource kit is available per project. The kits will be mailed directly to your school or university department.

Mentors

Volunteer mentors will be available to help develop your project and ideas. Mentors can be identified by contacting www.geography.org/sustainable/mentors. Mentors will be able to help with suggestions by e-mail, post, or telephone contact. Meetings between mentors and students under the age of 18 should be attended by instructors or parents.

Submission

If you have requested a resource kit and received a project number, please note this number on your project materials. Projects may be submitted either by e-mail, mail, or private shipping company. If submitted by e-mail, they should be sent to mycoeprojects@geography.org. If by mail or shipping company, they should be mailed to

MyCOE Projects
1710 16th Street NW
Washington, DC 20009-3198, USA

All projects must be submitted by May 31, 2002.

Eligibility

Students enrolled in any secondary school or university at any time during 2001 or 2002 are eligible to participate.

Awards

All projects submitted will receive an award for participation, and the school or university program designated by the participant will receive a book. Those projects selected for display on the MyCOE Web site or at major international meetings also will receive additional prizes that *may* include GPS receivers, GIS software, computers, travel for students and instructors to meetings displaying MyCOE projects, and more.

Permissions

All participant projects submitted to the MyCOE program will remain the property of the participant, but the MyCOE principals and sponsors will have the nonexclusive, irrevocable, worldwide license right and royalty-free permission to use, copy, reproduce, (re)publish, (re)distribute, and publicly display the map image(s) in various venues, formats, and mediums of communication as designated on the signed permission form. NOTE: A completed and signed permission form is required for each project submitted.

Resource List

The MyCOE Resource Kit has many valuable materials. There are, of course, many other resources, including books, software, magazines, Web sites, and so on, that could be utilized by your students to research and measure sustainable development issues geographically. See below for a resource list on the following topics: Geographic Education, Sustainable Development, the World Summit on Sustainable Development, Data, GIS Software, and Literature.

► Geographic Education

These electronic resources provide useful information for both students and instructors. It is by no means a complete list of Web sites that are relevant to geographic education, but you will find that many of them lead you to other useful Web sites.

American Geographical Society

www.amergeog.org

FOCUS on Geography is a quarterly magazine with articles written by well-known geographers, in-depth theme sections, maps, photos, and special issues focusing on a particular country and its geographic features. It provides geographical information and perspectives in a relaxed and readable style for a wide audience. *Around the World* is a series of six short books written by geographers for general readership. Each is about a single country (Japan, Switzerland, Fiji, Malta, Australia, Madagascar) describing its history, landscape, geography, politics, resources, culture, and prospects from a geographer's point of view. *The Geographical Review* is a quarterly journal that contains original and authoritative articles on all aspects of geography; *Ubique* is a newsletter that contains a wide array of material of geographical interest. The American Geographical Society (AGS) Collection, housed in the Golda Meier Library at the University of Wisconsin, is one of North America's foremost collections of geography publications and maps.

120 Wall Street, Suite 100
New York, NY 10005, USA
Tel.: 1-212-422-5456

ArcLessons

www.esri.com/arclessons

This is a database of lessons submitted by ESRI education teams (U.S. and international) and users in the education community. The lessons can be searched by several characteristics. Users can also upload their favorite lessons for consideration.

ArcNews and ArcUser GIS Stories on Education

www.esri.com/industries/k-12/hrpapers.html

Explore this series of articles from recent issues of *ArcNews* and *ArcUser*, highlighting successful projects in schools and libraries.

ArcVoyager GIS

www.esri.com/arcvoyager

A special adaptation of ArcView 3 for Windows and Macintosh, this product was constructed expressly for education. Four levels of increasing challenge make it easy to learn to use a GIS using prebuilt projects and onboard data and documents. ArcVoyager Special Edition is free for anyone, available for both Windows and Macintosh operating systems, and includes run-time elements of ArcView so that no other software is necessary to run a GIS.

Association of American Geographers ARGUS

www.aag.org/ARGUS/ARGUS.html

The ARGUS (Activities and Readings in the Geography of the United States) materials were designed for upper secondary school and introductory-level college courses. They consist of an interactive CD and a set of related student activities that encourage students to develop geographic skills as they explore issues in U.S. geography. For a detailed description, see the Education page on the AAG Web site. *The ARGWorld (Activities and Resources for the Geography of the World)* materials will be available in fall 2002. Modeled after the ARGUS materials, they also consist of an interactive CD and a set of student activities. Both the ARGUS and ARGWorld CDs offer many photographs, interactive maps, and animated explanations of key concepts in geography. Other AAG resources are listed on the Web site. They

include two professional journals, *The Professional Geographer* and *the Annals of the Association of American Geographers*; a newsletter; and a series of resource publications. The Web site also provides career information; contact information for college and university geography departments; and a service, Ask a Geographer, through which experts respond to queries from instructors and students.

1710 16th Street NW
Washington, DC 20009-3198, USA
Tel.: 1-202-234-1450

ESRI Higher Education GIS CD

www.esri.com/highered

This CD contains stories on how GIS is being taught and used in colleges and universities worldwide. It includes articles, videos, exercises, and other resources for GIS educators starting up a GIS lab and developing curriculum.

Examples of School GIS Programmes

www.esri.com/industries/k-12/hrschl.html

Here are descriptions and links to some K–12 schools doing significant projects using GIS in their curriculum.

Geographical Association

www.geography.org.uk

The Geographical Association publishes a wide range of resources for K–16 geography instruction and professional development. Titles are listed on the Web site.

160 Solly Street
Sheffield, S1 4BF, UK
Tel.: +44-0-114-296

Geography Discipline Network

www.glos.ac.uk/el/philg/gdn

The Geography Discipline Network publications include 10 guides that discuss methods of delivering and assessing teaching and learning in geography. Each guide focuses on a different issue and contains an overview of good practice; case studies, including contact names and addresses; and a bibliography. See the Web site for specific titles and other publications.

Geography & Environmental Management
Research Unit (GEMRU)
Cheltenham and Gloucester College of Higher
Education
Francis Close Hall
Swindon Road
Cheltenham, GL50 4AZ, UK

Geography Education National Implementation Project (GENIP)

www.missiongeography.org

This ongoing project sponsored by the AAG, the National Council on Geographic Education (NCGE), AGS, and NGS has recently developed the Mission Geography project that offers online curriculum materials that use satellite and space shuttle images and reflect NASA research. The materials are divided into three grade levels, and a number of the secondary school and university level activities relate to sustainable development.

Geography for Life

www.hawaii.edu/hga/Standard/Standard.html

The National Geography Standards (1994) were developed by NCGE and several other organizations and are available from NCGE. This publication offers guidelines for K–12 geography teaching and curriculum development. It is described in the online catalog.

GIS.com

www.gis.com

GIS.com is a portal to GIS information on the Web and was created by ESRI, a GIS software developer. The site is intended to educate anyone interested in geographic technology on the value that technology brings to day-to-day activities. The site also provides GIS users with resources to help them in their work.

GIS for Schools

www.esri.com/library/esripress/gjss.html

This book presents case studies of instructors using GIS in elementary and secondary education in the U.S. and Canada. It also includes two chapters on the pedagogical issues of inquiry-based teaching and problem-based learning.

GIS for Schools & Libraries CD

www.esri.com/k-12

This CD includes introductions to GIS, ArcVoyager GIS software installers, classroom lessons, and powerful data for exploration. Materials are equally usable on Windows and Macintosh computers.

GIS Stories from Other Publications

www.esri.com/industries/k-12/hrohart.html

Explore this series of papers from various publications, highlighting important activities in education and public access.

GIS Educator Newsletter

www.esri.com/highered

This newsletter for educators interested in GIS is mailed free, and archives are available for free online.

The GLOBE Program

www.globe.gov

This is a worldwide network of students, instructors, and scientists working together to study and understand the global environment.

The Journal of Geography

www.ncge.org/publications/journal

This journal contains articles on instructional approaches for K–12 and university classrooms, lesson plans, book reviews, maps, and computer software. *Perspective*, the NCGE newsletter, includes information on NCGE activities, resources for the geography classroom, and teaching tips. The *Pathways in Geography* series of publications teaches geographic concepts, themes, and skills at various levels of instruction. Pathways publications that are particularly relevant to this project include *Wetlands: Science, Politics, and Geographical Relationships to North America*;

Water in the Global Environment; Asian Women and Their Work: A Geography of Gender and Development; Why Not Here? Teaching Geography to a New Standard; and The Language of Maps. Finding a Way is a recent series of 27 teaching modules designed to encourage students in grades 7–11, especially girls of all racial and ethnic backgrounds, to learn and apply geography. For a complete description of these and other NCGE resources, order the free publications catalog or examine it online.

National Council for Geographic Education

www.ncge.org/www.ncge.org

16A Leonard Hall
Indiana University of Pennsylvania
Indiana, PA 15705, USA
Tel.: 1-724-357-6290

National Geographic Education Foundation

www.nationalgeographic.com/foundation

The mission of the National Geographic Society's Education Foundation is to prepare children to embrace a diverse world, succeed in a global economy, and steward the planet's resources. Since its founding in 1988, the Education Foundation has supported a nationwide restoration of geography in U.S. elementary and secondary education. The foundation offers grants to institutional partners, educational organizations, and instructors. In addition to the foundation, Geographic Education Outreach coordinates educational programs such as Geography Action! First implemented in 2001, Geography Action! is an educational program with an annual conservation theme that spun off of Geography Awareness Week.

National Geographic Explorer's Hall

www.nationalgeographic.com/explorer

Located in National Geographic Society headquarters, Explorer's Hall is an educational museum that offers large-scale, 3D, and often interactive displays of voyages along with artwork, crafts, and other cultural exhibits. During certain times of the year, Explorer's Hall also offers live lectures, live performances, and films.

National Geographic Online

www.nationalgeographic.com

National Geographic Online puts the society's resources at your fingertips. Web visitors can join the global adventure with daily news and expedition dispatches, profit from travel tools and tips, and pinpoint any place on earth with the MapMachine. The site also includes kids' activities, links to education resources, an online store, and interactive content from National Geographic's magazine and TV programs.

National Geographic Online for Teachers

www.nationalgeographic.com/education

This Web site provides educational resources for teachers through lesson plans, adventure stories, interactive learning modules, a teacher's store, and information on current grant programs through the National Geographic Society's Education Foundation.

National Geographic MapMachine

www.nationalgeographic.com/mapmachine

The National Geographic MapMachine is an interactive atlas of the world that allows users to explore scores of thematic maps ranging from population to physical geography to environmental factors. The MapMachine includes a gazetteer of more than two million place names, images of the map plates from the Society's Seventh Edition Atlas of the World, and flags and facts for every nation in the world.

National Geographic School Publishing

www.nationalgeographic.com/education/teacher_store/index.html

School Publishing offers a large selection of nonfiction, educational materials geared toward bringing geography education back to the classroom. From magazines and books to CD-ROMs and science kits (all grade levels), these supplemental materials help make children aware of the environment that surrounds them. Along with geography education, School Publishing also develops its books and magazines to promote literacy. All reading materials will support literacy development skills such as vocabulary development, decoding skills, comprehension strategies, diagrams, maps, and more.

Remote Sensing Core Curriculum

www.research.umbc.edu/~tbenja1

The Goal of the Remote Sensing Core Curriculum (RSCC) is to provide the resources to support a state-of-the-practice educational experience at our national and international collegiate institutions. The RSCC design represents a collection of the highest quality resource materials available in this rapidly growing field.

U.S. Community Atlas GIS Project

www.esri.com/communityatlas

This U.S. project was inspired by a Community Atlas project in Canada. Schools create a profile of their community composed of 1,000–2,500 words and 10–20 maps, and post it on the Community Atlas Web site, creating an entry in a searchable database of communities.

U.S. Department of State Geographic Learning Site

geography.state.gov/htmls/statehome.html

You will learn all about the U.S. Department of State: the interesting countries where U.S. diplomats work, places where the Secretary of State travels, geographic hot spots and cool sites, international affairs, and important international issues.

U.S. National Aeronautics and Space Administration (NASA): Earth Science Enterprise

education.nasa.gov/

Annually, NASA offers a rich slate of enrichment and study opportunities for students and educators, ranging from grade school to postdoctorate levels. Program information and application forms can be located from the NASA education home page.

Xpeditions Web Site

www.nationalgeographic.com/xpeditions

The Xpeditions Web site offers interactive adventures that illustrate the K–12 geography standards recommended by U.S. educators. Tap into family geography activities, a vast world atlas, lesson plans, and forums for teachers and students.

► Sustainable Development

These electronic resources provide useful information for both students and instructors. It is by no means a complete list of Web sites that are relevant to sustainable development, but you will find that many of them lead you to other useful Web sites.

Association of American Geographers

www.aag.org

The AAG educational resources include a set of teaching modules called Hands On: Human Dimensions of Global Change. The modules were designed for use in upper level high school or introductory college courses that deal with human-environment relationships. They provide information and activities designed to involve students in learning about nature–society relationships. Eight of the 10 modules are available online, and printed copies of all modules may be ordered from the AAG.

1710 16th Street NW
Washington, DC 20009-3198, USA
Tel.: 1-202-234-1450

Introduction to the Human Dimensions of Global Change

www.aag.org/HDGC/www/intro/toc.html

CountryWatch.com

www.countrywatch.com

CountryWatch is a world leader in providing country-specific geopolitical intelligence on each of the 191 countries of the world. Select a country on the Web site from a drop-down or regional menu to sample its information.

European Environment Agency— Digital Library for Earth System Education

www.dlese.org

The Digital Library for Earth System Education (DLESE) provides many teaching and learning resources that relate to sustainable development. They are categorized by topic and grade level. Instructors will find materials, and secondary school and university students will find a wealth of information on sustainable development topics, much of which is presented through visualizations, simulations, modeling, and imagery.

European Environment Agency
Kongens Nytorv 6, 1050
Copenhagen K, Denmark
Tel.: +45-33-71-00

European Environment Agency— Success Stories in Expanding Renewable Energy

[reports.eea.eu.int/
environmental_issue_report_2001_27/en](http://reports.eea.eu.int/environmental_issue_report_2001_27/en)

This paper identifies factors that can influence the success of renewable energy projects; reports on the extent to which each European Union (EU) country has expanded its use of renewable energy technologies and on several particularly successful projects.

European Environment Agency
Kongens Nytorv 6, 1050
Copenhagen K, Denmark
Tel.: +45-33-71-00

Global Change and Environmental Hazards: Is the World Becoming More Disastrous?

www.aag.org/HDGC/www/hazards/toc.html

Global Change and Urbanization in Latin America

www.aag.org/HDGC/www/urban/toc.html

Greenhouse Gas Emissions Graphics

[www.grida.no/db/maps/collection/climate6/
index.htm](http://www.grida.no/db/maps/collection/climate6/index.htm)

Graphs for 35 countries show actual (1990–1999) and projected (2000, 2010) emissions of the six greenhouse gases: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF₆).

Human Driving Forces and Their Impacts on Land Use/Land Cover

www.aag.org/HDGC/www/LUCC/titlepage.html

Human Health in the Balance

www.aag.org/HDGC/www/health/toc.htm

Industry in Concert with the Environment: Technological Change and Industrial Ecology

www.aag.org/HDGC/www/industry/toc.html

Inter-American Development Bank Library Collection

www.iadb.org/lib

These are publications that support the work of the Inter-American Development Bank (IDB) in the areas of Latin American and Caribbean economic and social development. These provide links to electronic journals, newspapers, development banks and institutes, and centers for Latin American Studies.

1300 New York Avenue NW
Washington, DC 20577, USA
Tel.: 1-202-623-1060
E-mail: bidjuventud@iadb.org

Integrated Centre for Integrated Mountain Development

[www.icimod.org/publications/imd/imd2001/
imd01-1.htm](http://www.icimod.org/publications/imd/imd2001/imd01-1.htm)

Agriculture in the Hindu Kush–Himalayan (HKH) region is in a stage of transition from traditional cereal crop farming to high-value cash crops such as fruits and vegetables. However, this ongoing transformation from subsistence to cash crop farming poses new challenges for maintaining crop productivity and quality. Among these challenges are crop failures due to inadequate pollination (Partap and Partap, 1997). Evidence of this emerging problem has been documented in a series of field studies (to be published soon) carried out by the Integrated Centre for Integrated Mountain Development (ICIMOD) across the HKH region.

International Institute for Sustainable Development

www.iisd.org

This site provides information about lessons learned through years of managing sustainable development knowledge networks. It also provides information on sustainable development in relation to international trade and investment, economic policy, climate change, measurement and indicators, and natural resource management. Check the site for appropriateness.

Living in the Biosphere: Production, Pattern, Population, and Diversity

[www.colorado.edu/geography/virtdept/
module/biosphere/toc.html](http://www.colorado.edu/geography/virtdept/module/biosphere/toc.html)

Mountain Development Profiles

[www.icimod.org/publications/profiles/
profile_menu.htm](http://www.icimod.org/publications/profiles/profile_menu.htm)

ICIMOD is the first international organization to make a commitment to improving the living conditions of mountain inhabitants in a sustainable way, helping them to live and not merely exist upon the highest wonders on earth. The Centre is multidisciplinary, area-focused, and mountain-based; it concentrates mainly on the Hindu Kush–Himalayan region. ICIMOD has much to offer to the Hindu Kush–Himalayan region as well as to other mountain regions facing similar problems.

Natural Resource and Environmental Management for Food Security

www.accnetwork.net/en/themes

This is a Web site that provides an overview of food security issues and challenges, and discusses the World Food Summit guidelines.

Physical Sciences Information Gateway

www.psigate.ac.uk/homenew.htm

Physical Sciences Information Gateway (PSIgate) provides access to high-quality Internet-based resources in the physical sciences, much of them related to sustainable development. It is useful for upper-level students and instructors.

Sustainable Development Dimensions

www.fao.org/sd/BRthm_en.htm

This Web site gives you access to a vast number of FAO reports on sustainable development through a searchable index (by theme and keyword). It also explains the international conventions and agreements related to sustainable development.

Think Locally, Act Globally! Linking Local and Global Communities Through Democracy and Environment

www.aag.org/HDGC/www/local/toc.html

United Nations Commission on Sustainable Development

www.un.org/esa/sustdev

This site offers assessments of UN activities in the area of sustainable development and several online publications including *Indicators of Sustainable Development: Framework and Methodologies* and four editions of *Sustainable Development Success Stories* (1997, 1998, 1999, 2000). The Success Stories provide information about projects and activities that have led to tangible results in the areas of land resource management, agriculture and forestry, financial resources, trade and investment, consumption and production patterns, poverty, education, and capacity building. The Success Stories are also available in print from

United Nations Publications
Sales and Marketing Section
Room DC2–853, Dept. I017
New York, NY 10017, USA
Tel.: 1-800-253-9646 or 1-212-963-8302
Fax: 1-212-963-3489

United Nations CyberSchoolBus

www.un.org/Pubs/CyberSchoolBus/habitat/dogood/dogood2.asp

Doing Good: The Best Practices List. Sustainable Human Settlements Development

This site provides concise descriptions of successful projects to support sustainability in population centers.

United Nations Development Programme

www.undp.org/sl

Partnerships to Fight Poverty

This site introduces the Sustainable Livelihoods approach in some detail and attempts to redefine development in terms of exploring what poor people already have. It seeks to direct the focus of development thinking toward supporting the talents, the knowledge, and the expertise of individual men and women.

United Nations Environment Programme

www.unep.org/geo2000/index.htm

Global Environment Outlook reviews environmental conditions around the world, region by region, and analyses the effects on the environment caused by changes in the economy, population growth, and political organization. This is also available in print from

United Nations Publications
Sales and Marketing Section
Room DC2–853, Dept. I017
New York, NY 10017, USA
Tel.: 1-800-253-9646 or 1-212-963-8302
Fax: 1-212-963-3489

United Nations Food and Agriculture Organization (FAO)

www.fao.org/sd/index_en.htm

Sustainable Development Department
Food and Agriculture Organization
Viale delle Terme di Caracalla, 00100
Rome, Italy
Tel.: +39-06-570-53037
E-mail: FAO-HQ@fao.org

United States Agency for International Development

www.usaid.gov

Numerous online publications including the *New Partnerships Initiative (NPI) Resource Guide*. NPI is an integrated approach to sustainable development that uses strategic partnering among community institutions. *Frontline* is a periodic report on United States Agency for International Development (USAID)-funded activities around the world. *The USAID Strategic Plan* explains the agency's major functions in terms of sustainable development.

The World Bank Group—Education for Sustainable Development

www.worldbank.org/depweb

This site provides information for students and instructors on several important sustainable development topics including articles, graphs, maps, and data sets. The site also offers classroom activities and links to other sites that focus on sustainable development.

► World Summit on Sustainable Development

Three of the main Web sites that have information on the WSSD are

www.johannesburgsummit.org

www.joburgsummit2002.com

www.earthsummit2002.org

► Data

CIESIN

www.ciesin.org/data.html

Data Exchange Platform for the Horn of Africa

www.depha.org/depha

El Instituto Nacional de Estadística, Geografía e Informática (Mexico's National Institute of Statistical and Geographic Information)

www.inegi.gob.mx

ESRI's TIGER95

www.esri.com/data/online/tiger/index.html

ESRI's GIS Jump Station

www.gis.com/jumpstation

This site contains links to many global and local sites with downloadable data.

ESRI's ArcData Online

www.esri.com/data/online/index.html

This site permits free construction of thematic and reference maps using just a Web browser and an Internet connection.

ESRI's Internet Mapping Demos

maps.esri.com or www.esri.com/software/internetmaps/index.html

This site includes focused explorations, from global to local, of some U.S. locations.

GEO-3 Data Portal

geo3.grid.unep.ch/scripts/esrimap.dll?name=GEO3&cmd=Map

The Geography Network

www.geographynetwork.com

The Geography Network is the global cooperative for publishing and sharing geographic data and map services over the Internet. A huge volume of data can be found here.

The Geography Network's Census 2000

www.geographynetwork.com/data/tiger2000/

This Web site contains many layers of information from the 1990 and 2000 Censuses. Geographic and population/housing data for every county of the U.S. can be downloaded for free. There is a lesson online containing detailed instructions on downloading and using TIGER data at www.esri.com/industries/k-12/tiger.html.

Geoscience Australia: Maps of Australia

www.auslig.gov.au/facts/map.htm

Geoscience Australia: Data Download

www.auslig.gov.au/download

GIS Data Depot

www.gisdatadepot.com

This site contains an enormous volume of global data that can be downloaded and used in mapping activities.

Global Land Cover

edcdaac.usgs.gov/glcc/glcc.html

Global Terrestrial Observation System (GTOS)

www.fao.org/gtos

GLOBE Program's Visualizations Page

www.globe.gov

This site offers opportunities to see map displays of current and historical atmospheric data for the planet.

Instituto Geografico Nacional

www.mfom.es/ign/top_geografico.html

National Geographic Institute of Spain.

LandScan

www.ornl.gov/gist/projects/LandScan/landscan_doc.htm

National Atlas of Canada

atlas.gc.ca/english/

National Atlas of Sweden

www.sna.se/webatlas/index.html

National Geographic Society's MapMachine

www.nationalgeographic.com/maps

The MapMachine is a joint effort between the National Geographic Society and ESRI.

Perry-Castaneda Map Library

www.lib.utexas.edu/Libs/PCL/Map_collection/Map_collection.html

Population Reference Bureau

www.prb.org

The Data Finder contains data on 85 demographic variables for 221 countries, 28 world regions and subregions, the world as a whole, the United States as a whole, and the U.S. states. (Not all countries have data on all variables.)

Population Reference Bureau

1875 Connecticut Avenue NW, Suite 520
Washington, DC 10009-5728, USA

Tel.: 1-800-877-9881 or 1-202-483-1100

Fax: 1-202-328-3937

E-mail: popref@prb.org

Remote Sensing Research Unit (UCSB)

www.geog.ucsb.edu/~kline/global_map/global/global.htm

United States National Imagery and Mapping Agency (NIMA) GeoEngine

geoengine.nima.mil

**United Nations Office for
Coordination of Humanitarian
Affairs (ReliefWeb)**

www.reliefweb.int

www.reliefweb.int/w/map.nsf/home

**United Nations Environment
Programme's UNEP.Net**

www.unep.net

UNEP.Net Explorer

www.unep.net/explorer

**UNEP World Conservation
Monitoring Center**

www.unep-wcmc.org/reception/ims.htm

**U.S. Bureau of the Census'
American Factfinder**

factfinder.census.gov

**U.S. Bureau of the Census' TIGER
Map Server**

tiger.census.gov/cgi-bin/mapsurfer

This map server allows you to create community-level reference and thematic maps.

U.S. Department of Agriculture links

1997 Agriculture Census

www.nass.usda.gov/census/census97/atlas97/index.htm

Forest Service, Data and Information Systems

www.fs.fed.us/database

Forest Service, Forest Land Maps

www.fs.fed.us/links/maps.shtml

NASS Crop Maps

www.usda.gov/nass/aggraphs/cropmap.htm

National Agricultural Statistics Service

www.usda.gov/nass

Natural Resources Conservation Service

www.nrcs.usda.gov

NRCS Maps, Facts & Figures Index

www.nhq.nrcs.usda.gov/land/index/intro.html

NRCS Technical Resources

www.nrcs.usda.gov/TechRes.html

**U.S. Environmental Protection
Agency (EPA) links**

Environmental Atlas

www.epa.gov/ceisweb1/ceishome/atlas/index.htm

EPA's BASINS

www.epa.gov/ostwater/basins

This site contains watershed data for the 48 conterminous states. Data can be downloaded for free. There is a lesson online containing detailed instructions on downloading and using BASINS data (www.esri.com/industries/k-12/basins.html).

EPA's Surf Your Watershed Map Server

www.epa.gov/surf

This site permits exploring according to physical region, rather than political region.

Portal to Sites

www.epa.gov/ceisweb1/ceishome/atlas/learngeog/interactivewebmapping.html

U.S. Geological Survey (USGS) links

Biological Resources Division's Main Page

biology.usgs.gov

Bird Species Map Page

www.mbr-pwrc.usgs.gov/bbs/htm96/map617/all.html

**CINDI Center for Integration of Natural
Disaster Information**

cindi.usgs.gov

**CINDI, Hurricane Mitch Mapper and Data
Warehouse**

cindi.usgs.gov/hazard/event/mitch/mitch/cent_amer.html

Geologic Division's Main Page

geology.usgs.gov/index.shtml

**Geologic Division's Recent
Earthquake Home Page**

quake.usgs.gov/QUAKES/CURRENT/current.html

Global Elevation Data

edcdaac.usgs.gov/gtopo30/gtopo30.html

Global GIS Site

webgis.wr.usgs.gov/globalgis

This site contains descriptions of an orderable seven-CD data series for use with ArcView. 1:1 million-scale physical and human geographic data by world region.

**Midcontinent Ecological Sciences Center's
Technology Applications Team Home Page**

orion.cr.usgs.gov/html/mescdt.html

National Atlas

www-atlas.usgs.gov

**National Earthquake Information Center
Home Page**

gldss7.cr.usgs.gov

National Mapping Division's Main Page

mapping.usgs.gov

National Water Conditions Home Page

water.usgs.gov/nwc

Near Real-Time Earthquake List

earthquake.usgs.gov/neis/bulletin/bulletin.html

North American Breeding Bird Survey

www.mbr-pwrc.usgs.gov/bbs/bbs.html

Water Resources Division's Main Page

water.usgs.gov

**U.S. Library of Congress
Map Collections 1544-1999**

lcweb2.loc.gov/ammem/gmdhtml/gmdhome.html

**U.S. National Aeronautics and
Space Administration links**

**Earth Science Image Studio and
Multimedia Gallery**

www.earth.nasa.gov/introduction/studio.html

JPL Earth Sciences Home Page

www.jpl.nasa.gov/earth

NASA Global Change Master Directory

gcmd.nasa.gov/

This site has a rich set of data about data (metadata).

NASA Photo Gallery

www.nasa.gov/gallery/photo/index.html

NASA Shuttle Photo Gallery

eol.jsc.nasa.gov/sseop/clickmap

Scientific Visualization Studio

svs.gsfc.nasa.gov/imagewall

Shuttle Radar Topography Mission

www.jpl.nasa.gov/srtm

SIR-C Mission Home Page

southport.jpl.nasa.gov/sir-c

Visualization of Remote Sensing Data

rsd.gsfc.nasa.gov/rsd

U.S. National Oceanic and Atmospheric Administration (NOAA) links

Geostationary Satellite Server

www.goes.noaa.gov

Interactive Weather Information Network

iwin.nws.noaa.gov/iwin/graphicsversion/bigmain.html

Laboratory for Satellite Altimetry (Oceanographic)

ibis.grdl.noaa.gov/SAT/SAT.html

National Ocean Service

mapfinder.nos.noaa.gov

Operational Significant Event Imagery Server

www.osei.noaa.gov

Satellite's Eye Art Gallery

www.ncdc.noaa.gov/ol/satellite/satelliteseye/satelliteseye.html

Space Physics Interactive Data Resource (including Nighttime Lights of the World)

spidr.ngdc.noaa.gov

► Literature

These paper/electronic literature resources provide useful information for both students and instructors. This is by no means a complete list of references that are relevant to sustainable development or geography.

"AuThenTiCITY: Youth Mapping Community Solutions"

www.esri.com/news/arcuser/0700/auth.html

"Bioenergy Primer: Modernized Biomass Energy for Sustainable Development"

United Nations Environment Programme. 2001. This paper examines the links between energy and sustainable human development and the role of bioenergy—energy that is derived from wood and other plant matter—as an important potential contributor to sustainable energy strategies, particularly when converted to electricity and liquid and gaseous fuels. For more information, contact

United Nations Publications
Sales and Marketing Section
Room DC2-853, Dept. 1017
New York, NY 10017, USA
Tel.: 1-800-253-9646 or 1-212-963-8302
Fax: 1-212-963-3489

"Boundaries of Home: Mapping for Local Empowerment"

www.newsociety.com/bohofs.html

The publisher is New Society Publishers, Philadelphia, PA. ISBN 0-86571-272-7

"Development After Rio: Prospects and Challenges"

United Nations Development Programme. 1999. This paper discusses energy for sustainable development. It focuses on major global issues, energy supply and demand, and the implications of sustainable energy systems. For more information, contact

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Sales and Marketing Section
Room DC2-853, Dept. 1017
New York, NY 10017, USA
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Fax: 1-212-963-3489

"Education for Development: A Teacher's Resource for Global Learning"

www.unicef.org/pubsgen/edu-develop

Young people are bombarded daily with information on global issues such as violence, poverty, hunger, prejudice, and environmental degradation. *Education for Development* helps young people make the link between global issues and local concerns and shows how they can apply what they learn to their own lives and communities. Packed with illustrations, it provides teachers of all subjects and all levels with exciting and practical classroom activities that can be integrated into the existing curriculum. *Education for Development* is divided into five sections that explore these central concepts: interdependence, images and perceptions, social justice, conflict and conflict resolution, and change and the future. Grades K-12.

Author: Susan Fountain, Price: US\$24.00, No. of pages: 318, Publication date: 1995, Publisher: Hodder & Stoughton, Language: English, ISBN: 0-340-61904-X, Sales no.: 98.XX.USA.89.

"Forests, Fuels and the Future: Wood Energy for Sustainable Development"

United Nations Food and Agriculture Organization. 1995. FAO Forestry Topics Report No. 5. Available from

Chief, Environment and Natural Resources Service (SDRN), FAO
Viale delle Terme di Caracalla 00100
Rome, Italy
E-mail: changchui.he@fao.org

"Global Food Supply Prospects"

Ingco, Merlinda, Donald Mitchell, Alex F. McCalla, World Bank, Washington, DC 1996.

"Global Warming: The Complete Briefing"

Houghton, John T. 1997. Cambridge: Cambridge University Press. This is a comprehensive guide to the science and politics of global warming. It discusses the likely impacts of global warming and actions that can be taken by governments, industry, and individuals.

“Managing the World’s Forests: Looking for Balance Between Conservation and Development”

Sharma, Narendra, ed. 1992. Dubuque, Iowa: Kendall/Hunt. This book contains a wealth of information about forest resource management. Topics include deforestation, the role of forests in climate change and in biodiversity, and management options that support sustainability.

“Mexican Innovations in Water Management”

This book contains 15 chapters on community experiences in Mexico as well as an overview of the water management problems in the country. Number of pages: 234. Language: Spanish; Price US\$15.00 postpaid in North America, US\$17.00 elsewhere, ISBN: 968-7671-05-X. For more information

E-mail: barkin@cueytal.uam.mx

Mountain Forum Online Library (International Year of the Mountains)

www.mtnforum.org/resources/library/liblevels/lib1.htm

“Pachamama: Our Earth—Our Future” (GEO-2000 for Youth)

<http://www.grida.no/geo2000/pacha/contents.htm>

This book is a perfect introduction for young people to the environmental challenges that await us in the 21st century. Based on the United Nations Environment Programme’s authoritative Global Environment Outlook, it describes both the state of the world’s environment and what action governments and young people are taking to address the problems we face. Drawn from the contributions of thousands of young people around the world, the book includes personal accounts, poems, illustrations, and a foldout Ecomaze game to test the reader’s new knowledge in a fun and informative way. Year of publication: 1999; Paperback 96 pages; ISBN: 0237521199; Stock number: 2347; Price: US\$11.95.

“Protecting Our Planet, Securing Our Future”

United Nations Environment Programme. 2000.

This paper discusses the links among important environmental issues and the ways in which those issues can be approached in an integrated manner.

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Room DC2–853, Dept. I017
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Fax: 1-212-963-3489

“State of the World Cities”

www.unhsp.org

United Nations Center for Human Settlements (UN-HABITAT). 2001 UNCHS book. ISBN: 92-1-131476-3

“State of the World”

Brown, Lester. 2001.

This annual publication assesses many current environmental conditions and explains some of the current success stories in sustainable development. It offers ideas for positive action that can be transferred to other places.

Worldwatch Institute
1776 Massachusetts Avenue NW
Washington, DC 20036-1904, USA
Tel.: 1-202-452-1999

“Vital Climate Graphics: The Impacts of Climate Change”

www.grida.no/climate/vital/index.htm

This is an authoritative book on climate change focused on causes, impacts, and mitigation of climate change. It is also available in print from

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New York, NY 10017, USA
Tel.: 1-800-253-9646 or 1-212-963-8302
Fax: 1-212-963-3489

“What Is Sustainability?”

Tel.: 800-561-6719

E-mail: puborders@orst.edu

“World Resources 2000–2001 People and Ecosystems: The Fraying Web of Life”

This is a collaborative product of four organizations: the United Nations Development Programme, United Nations Environment Programme, the World Bank, and the World Resources Institute.

ISBN: 1-56973-443-7

“World in Transition: Conservation and Sustainable Use of the Biosphere”

German Advisory Council on Global Change. 2001. The German Advisory Council on Global Change and Earthscan Publications Ltd. present an analysis of the state of the biosphere, with a strong focus on biodiversity. It is available from

Earthscan Publications Ltd.
120 Pentonville Road
London N19JN, UK
Tel.: +44-0-1903-828-8000

“World in Transition 2: New Structures for Global Environmental Policy”

German Advisory Council on Global Change. 2001. The German Advisory Council on Global Change and Earthscan Publications Ltd. present an analysis of current environmental problems and proposals for comprehensive policies. It is available from

Earthscan Publications Ltd.
120 Pentonville Road
London N19JN, UK
Tel.: +44-0-1903-828-8000

“World Water Vision: Making Water Everybody’s Business”

Cosgrove, William J. and Frank R. Rijsberman. 2000. London. This paper gives a comprehensive diagnosis of water resources, the pressures on them, and the steps we can take to reverse the current water crisis. It is available from

Earthscan Publications Ltd.
120 Pentonville Road
London N19JN, UK
Tel.: +44-0-1903-828-8000

“Yearbook of International Cooperation on Environment and Development”

United Nations Environment Programme. 2001/2002.

This book assesses the status of international cooperation on issues that relate to sustainable development. It discusses the international community’s position on specific environment and development problems, the main obstacles to effective international solutions, and the means of overcoming them. It also explains the most important international agreements on sustainable development.

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► Free GIS Software

DLGView32 from USGS (Viewing Only) for Vector and Raster Data

mcmcweb.er.usgs.gov/viewers/dlg_view.html

ESRI Software Resources

www.esri.com/company/free.html

GeoCommunity Software Resources

software.geocomm.com/index.html

GeoCommunity ESRI Data Translator

software.geocomm.com/translators

For converting data into ESRI formats for analysis.

GeoCommunity GIS Viewers

software.geocomm.com/viewers

For viewing a range of both raster and vector data sets.

My Community, Our Earth

Geographic Learning for Sustainable Development
1710 16th Street NW
Washington, DC 20009-3198, USA

For more information

Tel.: 202-667-2229
Fax: 202-234-2744

Visit the MyCOE Web page at

www.geography.org/sustainable

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