

Final Report Mary Haque

PROJECT TITLE: DEVELOPING A SUSTAINABILITY TOOL KIT FOR NATIONAL DISTRIBUTION BY NATIONAL WILDLIFE FEDERATION AND HABITAT FOR HUMANITY INTERNATIONAL

APPLICANT ORGANIZATION: Clemson University
College of Agriculture, Forestry, and Life Sciences in Partnership with the National
Wildlife Federation

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THE TOOLKIT

We developed educational materials about tree protection, preservation, selection, maintenance and benefits of urban trees for a Sustainability Tool Kit (a published book) for distribution by the National Wildlife Federation and Habitat for Humanity International. Clemson University faculty and students partnered with NWF and HFHI to develop a Tool Kit with two primary goals:

1. To assist HFH affiliates (primarily volunteers) in planning and building homes that are in harmony with nature; and
2. To assist HFH affiliates in connecting HFH homeowners and their families with the nature in their own backyards and neighborhoods.

The Tool Kit will also be of use to local conservation organizations and school groups wishing to work with HFH affiliates on greening projects.

NWF delayed the publication of the toolkit (originally scheduled for publication in the spring of 2000) to seek additional funding so that a larger number of booklets could be published at once. See memo below from NWF.

The initial distribution for the Tool Kit will be the 500+ members of HFH Green Team. These individuals are working as volunteers with HFH affiliates around the country and have expressed an interest in environmentally friendly building. NWF will also promote the tool kit to its network of affiliates and volunteers, some of which have expressed an interest in approaching local HFH affiliates to help them green their building and development practices.

**E-MAIL UPDATE FROM NATIONAL WILDLIFE FEDERATION
AUGUST 2000**

August 7, 2000

Dear Mary,

I would like to provide an update for you, your Clemson associates, and your funders on the status of the conservation and sustainability tool kit we are producing for Habitat for Humanity(HFH). As you know, NWF is behind schedule on this project. Our progress on this project was stalled temporarily last winter due to lack of funding for design and printing. This problem was remedied through our fund-raising efforts. We secured a grant to fund the design, printing, and dissemination, and to increase our efforts to evaluate the effectiveness of the tool kit. Staffing transitions here at NWF also contributed to the slower progress. While this project is taking longer to complete, it is our belief that the end product will be of higher quality as a result of the additional funds secured and a key partnership we established with the National Council of State Garden Clubs to aid in dissemination and implementation.

Here is the time line for completion of the project.

Aug. - Sept. 2000: Complete copy editing for the tool kit.

Oct. 2000: Disseminate to partners and contributors for copy review.

Nov. - Dec. 2000: Complete copy layout and illustration. Print 2500 tool kits.

Jan. 2001: Disseminate 1300 copies of the tool kit to HFH Green Team volunteers and National Council of State Garden Clubs (NCSGC) network. Upload tool kit to the Internet and make available on NWF and HFHI web sites.

Feb. 2001: Promote tool kit through NWF, NCSGC, and HFHI magazines and newsletters and through press releases to trade and popular media.

Mar. - Oct. 2001: Tool kit implementation by HFH affiliates with assistance from HFH Green Team volunteers, garden clubs, NWF members, and others.

Nov. 2001 - Jan. 2002: Evaluate year one of implementation. Produce report on the impacts of the tool kit including case studies. Revise and reprint tool kit as needed. Annual evaluations and revisions will also be made in late 2003 and 2004.

David Mizejewski is the main NWF contact now working on this project. He can be reached at 703-790-4499 or mizejewski@nwf.org.

Thank you for your patience!

Sincerely,

Heather Carskaddan
Director, Community Education Programs
National Wildlife Federation
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COURSE DEVELOPMENT SUSTAINABILITY IN TEACHING FALL SEMESTER '99

HORT. 208 LANDSCAPE APPRECIATION

HABITAT FOR HUMANITY SUSTAINABLE LANDSCAPES HOMECOMING EDUCATIONAL DISPLAYS ON BOWMAN FIELD

Clemson University students partnered with Habitat for Humanity, the National Wildlife Federation, the South Carolina Forestry Commission, and the Sustainable Universities initiative to design and exhibit educational displays on how to create sustainable landscapes. Students from three classes in horticulture and landscape architecture prepared exhibits to share with Habitat homeowners, volunteers, and the thousands of Clemson University football fans that come to admire the Central Spirit displays and Habitat for Humanity Home on built on Bowman Field during the week of homecoming.

The goal of the project was to encourage Habitat for Humanity homeowners and volunteers to think beyond the home itself and to consider the site and landscape surrounding the home and connecting to a greater community. Traditional home building practices can be very destructive to the environment, and Habitat for Humanity International has demonstrated its commitment to pioneer new methods by forming an alliance with the National Wildlife Federation. Traditional practices like bulldozing an entire site to place a home have caused enormous erosion and sedimentation problems, water runoff problems, unnecessary destruction of wildlife habitat and loss of biodiversity. Students at Clemson are committed to helping Habitat for Humanity pioneer more environmentally friendly approaches that maintain more of the natural beauty of a site. Based on the idea that humans and wildlife have the same needs of food, water, shelter, and a safe place to raise their young, the new approach encourages protection of existing vegetation, soils, water and wildlife habitat.

Students in Horticulture 308, Landscape Design, exhibited design proposals for Wanda Marshall's homecoming home, which was moved from Bowman Field to a site in Central, SC. Horticulture 208, Landscape Appreciation students researched topics such as Landscape Design for Energy Efficiency, Tree Pruning, Preventing Soil Erosion, Tree Protection on Construction Sites, Attracting Birds to Your Garden, and Wildlife Gardening. They prepared full color brochures to handout on site and also created a web page about the project.

HORT. 308 LANDSCAPE DESIGN Professor Mary Taylor Haque

Students completed projects including the Wanda Marshall Residence for Habitat for Humanity, a restoration for the Ed Kilby Residence, and a series of individual projects of their own choosing including churches, residences, and businesses. They presented their work on Bowman Field during Homecoming week, developed a web page, and gave a powerpoint presentation at CommuniCon.

HORT. 408 INDEPENDENT STUDY Professor Mary Taylor Haque

Mr. Brian Schumpart completed a site analysis and landscape design for the Marshall Residence as an independent study during the fall of 1999. His work will be published in the "Tool Kit" being prepared by the National Wildlife Federation in fall of 2000.

LARCH 490 DIRECTED STUDIES IN LANDSCAPE ARCHITECTURE Professor Lolly Tai

Mr. Elliott Buff and Mr. Albert Lynn researched creating sustainable home landscapes and created the illustrations for the toolkit publication. Their work was presented at the Bowman Field Homecoming Demonstration and at CommuniCon on November 9, 1999. The title of their CommuniCon presentation was "Illustrating a booklet on Sustainable Landscapes for Distribution by the National Wildlife Federation". Their work will be published in the "Tool Kit" being prepared by the National Wildlife Federation in fall of 2000.

COURSE DEVELOPMENT SUSTAINABILITY IN TEACHING SPRING SEMESTER 2000

Haque taught 13 contact hours spring 2000 semester. Courses included Hort. 208 Landscape Appreciation; Hort. 308 Landscape Design; Agric H491 Honors Research; and Hort. 400 Landscape Implementation. Sustainability issues were emphasized in all four courses.

HORT. 400 LANDSCAPE IMPLEMENTATION Professor Mary Taylor Haque

I taught Landscape Implementation as a service learning course in partnership with the City of Clemson, Habitat for Humanity, and the South Carolina Botanical Garden. Students gained hands on experience implementing landscape plans including planting trees, shrubs, ground covers, annuals, perennials, and vines, pruning and arboretum restoration, retaining wall construction, paver installation, and irrigation. Professional and career development was also stressed through two field trips. The Sustainable Universities Initiative and the SC Energy Office funded conference expenses and travel for students and faculty to the Greenprints 2000 Conference in Atlanta, GA. Students were also encouraged to attend the Associated Landscape Contractors of America (ALCA) Career Day conference at Mississippi State University.

The primary objective of this course, giving students both theoretical and hands on experience in landscape implementation and landscape operations, was achieved through service learning. We kicked off the semester with a Municipal Landscape Planning workshop sponsored by the City of Clemson at Littlejohn Community Center. The landscape projects that we contributed to include:

1. Habitat for Humanity-Wanda Marshall Residence landscape installation in Central, SC
2. Renovation in the Forestry Arboretum at the South Carolina Botanical Garden with Mr. Henry King
3. Nettles Park: Entry Sign planting installation and Parking Lot pruning of existing trees.

4. Retaining wall construction between City Hall and Law Enforcement Building
5. Irrigation installation at Indoor Recreation Center in Central, SC
6. Brick paver installation for platform at City Hall Entrance

Guest professionals who either requested or were invited to work with our class included:

Dr. Joe Dickerson-Professor emeritus, Plant Pathology, and Property Chairman for Habitat for Humanity
Mr. Henry King, SC Botanical Garden, Schoenneck Forestry Arboretum.
February 28, 2000.
Mr. John Mason, Horticulturist, City of Clemson
Mr. Joe Heard, City Manager, Hartsville, SC
Mr. Rick Cotton, City Administrator, Clemson, SC

Student teams developed web page and poster presentations of class projects for display at Earth Day and for use by students as an electronic portfolio.

Student developed web site:

<http://virtual.clemson.edu/groups/hort/HORT400/HORT400.htm>

Student developed web site 2: http://virtual.clemson.edu/groups/hort/course/HTML_SUS_land_pres/HTML%20Presentation%20folder/sld001.htm

HORT. 308 LANDSCAPE DESIGN

Landscape design students in the spring section of Hort. 308 completed a program, site analysis, and planting plan for the Rajapakse Residence and for the Morrison Elementary School Courtyard with an emphasis on sustainability. They also worked on an "instant design" for the Vivian Haley-Zitlin Residence and researched topics related to all three of the projects. They presented their work to their clients and to the public at Morrison School and CommuniCon. See below for a listing of presentations.

CommuniCon Student Presentations by Hort. 308 Students:
March 9, 2000. The Madren Center, Clemson University, Clemson, SC.

"Creative Landscapes for Schools and Churches" by Missy Ferguson, Leigh Murray, Matt Swartzmiller, and Sarah White

"Designing Sustainable Residential Landscapes" by Jason Horton, Kevin Lewis, Philip Porter, and John Michael Thompson

"Schoolyard Habitat Design" by Jeffrey Aiken, Jennifer Dukes, and Matthew Smith

"Transforming Landscapes" by Andrew Parrish, Erik Rogers, Michael Sansbury, and Sara Stuerke

HORT. 208 LANDSCAPE APPRECIATION

This theory course included an optional field trip to ALCA Career Days at Mississippi State University and a Habitat Stewards Workshop in Greenville, SC.

AGRIC H491 HONORS RESEARCH Professor Mary Taylor Haque

Horticulture student Jennifer Dukes submitted a proposal and was funded by the Honors Program to research schoolyard habitats and do an analysis and sustainable design for the new Morrison Elementary School. Since beginning her research and case studies to see what other schools around the state have been doing with learning landscapes, she has had several requests for help from other schools. She is presently going above and beyond her requirements by working on service learning projects not only with Morrison School, but also with Dorchester Academy in St. George and R.L. Lewis in Pickens County.

Her list of requests has grown to include Richard Winn Academy in Fairfield County; Denny Terrace Elementary School in Richland County, and Hunt Meadow Primary School in Anderson County, SC. To try to meet these growing school needs, Jennifer agreed to work with Deborah Johnson, Director of the Belser Arboretum at U.S.C. in Columbia and with me to partner on a grant proposal entitled: "Linking Universities and K-12 Through the Planning and Design of Outdoor Learning Environments for South Carolina Schools." The grant has been funded by the Sustainable Universities Initiative which will allow Jennifer to broaden her senior honors project to include projects for these additional schools over the summer and into the fall of 2000.

Building on the Sustainable Universities Initiative, Landscapes for Learning initiatives, and the schoolyard habitat program established by the National Wildlife Federation (NWF), Jennifer's projects involve students, teachers, and administrators from many schools and agencies. Her goal is to research, plan, design, and reflect on sustainable and efficient landscapes for as many of the schools as funding will allow. She has already developed a PowerPoint presentation on sustainable schools which was presented at CommuniCon 2000 with other service learning students. She is presently revising and expanding this presentation to make it useful to interested K-12 schools. She is working with faculty, students, parents and administrators from partnering schools, Clemson University, U.S.C., volunteers, and school board officials in four phases: 1) research, analysis, and information gathering; 2) planning and design; 3) reflection and 4) evaluation, sharing, recognition and celebration.

She developed a poster about her honors service learning project for the Honors Poster Presentations held Thursday, April 13, 2000 at the Clemson House. She also presented her work at Morrison Elementary School on Wednesday, April 12, 2000. She displayed her poster at Earth Day and the Service Learning Celebration in April 2000. Over the summer and fall, she will continue work on designs for other schools and will begin writing a journal article. She plans to present her work at the next SR-American Society of Horticultural Science meeting in February of 2001. She is successfully integrating research, learning, and service in a scholarly manner.

LARCH 451 AND 452 LANDSCAPE ARCHITECTURE DESIGN STUDIOS

Professors: Lolly Tai, RLA, ASLA and Umit Yilmaz, Ph.D.

The Clemson Road/Two Notch Road Landscape Design Project

Clemson University third and fourth year students and faculty have been involved in the landscape design for the Clemson Road/Two Notch Road Landscape Design at the

Sandhill Research and Education Center. Their design proposal is for an innovative design alternative for the intersection which recognizes the northwest “gateway” of Columbia, while integrating many physical, environmental and aesthetic design issues. Their plan incorporates sustainable approaches and addresses erosion control measures, wetland remediation, xeriscape planting, community association, cost estimates and phasing proposals and the creation of a sense of place through the overall landscape design. Special design features include median planting and street trees along Clemson Road to Rhame Road, wildflowers and evergreens in the cloverleaf for seasonal color and low maintenance, retaining walls to alleviate erosion from steep slopes, creation of a new wetland for phytoremediation and an educational park, entrance landscape to experimental station and commercial properties, and sidewalk connection to the community. The students devoted an entire semester to this service learning project. Over one hundred drawings were produced. At the final presentation, students presented large scaled plans and sketches to illustrate and explain their design ideas. A sixteen feet model explained the overall concept in three dimensional form and a seventy-five page publication documents the entire design process.

INTERNATIONAL WORK WITH EMPHASIS ON SUSTAINABILITY THROUGH THE USE OF NATIVE PLANTS:

In November of 1999, Mary Haque led an upstate tour of South Carolina for a German team led by Dr. Joe Weingarten and Matthias Schmitt, Managing Directors of the Landesgarten Schau 2000 Kaiserslautern . We brainstormed with professionals about the design for a “South Carolina Sister State” garden to be featured in Germany April-October of 2000. Our German sister state of Rheinland-Pfalz is hosting this garden show in Kaiserslautern. This is no ordinary event. The show will last six months and expects to attract 500,000 to 600,000 visitors. Rheinland-Pfalz is spending about \$25 million to develop the show and the grounds. They wanted to represent South Carolina accurately and therefore toured the state and consulted with professionals in the coastal, midlands, and upstate areas of South Carolina, Mr. Rick Huffman, President of the SC Native Plant Society, Mr. James Arnold with the SC Botanical Garden, and Haque stressed the use of native plants for this educational garden with international impact.

INVITED PRESENTATIONS ON SUSTAINABILITY ISSUES:

Haque, Mary. “Designing for Xeric Conditions”. Lichtenfeldt Nursery, October 23, 1999. Greenville, SC.

Haque, Mary. “Address for the Commission of Higher Education Governor’s Professor of the Year Awards Luncheon”. November 4, 1999. Columbia, SC.

Haque, Mary. “Landscape Design Process for Habitat Homes”. Habitat for Humanity PickensCounty Chapter Annual Meeting. November 11, 1999.

Haque, Mary. “Ideas and Landscapes for a South Carolina Sister State Garden in the Landesgarten Schau 2000 Kaiserslautern Germany (Garden Show 20000).” South

Carolina Botanical Garden for German Design Team Representatives. November 15, 1999.

Haque, Mary. "Communication in Horticulture Service Learning Classes." Communication Across the Curriculum Symposium. Clemson University. May 3, 2000. (Discussed several projects related to sustainability issues.)

Dukes, Jennifer (Advisee). Poster presentation on Schoolyard Habitats. Honors Research Forum. April 13, 2000.

Hort. 308 Student Presentations at Morrison Elementary School with Dr. Gina McLellon's PRTM Classes. "Courtyard Design for Elementary School Science Education." April 12, 2000.

Earth Day presentations of student posters by Donna London. April 28, 2000.

Interview with Catherine Bowen Drewry and Pat Smith, Director of "The Southern Gardener" PBS Television show on Habitat project.

National Video on Service Learning Completed featuring Clemson University, East Michigan, Benedict College, Bates College, and Brevard Community College. The Clemson segment featured the Habitat for Humanity project. June 30, 2000.

Student developed web site:

<http://virtual.clemson.edu/groups/hort/HORT400/HORT400.htm>

Student developed web site 2:

http://virtual.clemson.edu/groups/hort/course/HTML_SUS_land_pres/HTML%20Presentation%20folder/sld001.htm

NEWSLETTERS, MAGAZINES, POPULAR PRESS ARTICLES ABOUT OUR SUSTAINABILITY PROJECTS

"Outdoor Classroom Created from Historic Tree" by Debbie Dalhouse. Inside Clemson. Vol.8, No.23, p.1. (cover feature story) Friday, May 28, 1999. This article was also published on the CU Website.

"The Sustainable Universities Initiative-Balancing Economic, Environmental, and Community Needs". Trish Jerman. E2SC Environmental Excellence in South Carolina-The Promise of Sustainability. University of South Carolina Institute of Public Affairs. Cover feature and pp. 22-23. Spring 1999.

Newall, Liz. "Learning that Matters". Clemson World Magazine. Vol. 52 (4): 18-23. Fall 1999.

Miller, Minnie. "Wisteria-Beauty or Beast." Newspaper Article. T&D Bamberg correspondent. April 2000. (Quote by Haque about Wisteria frutescens 'Amethyst Falls' native wisteria.)

PUBLISHED JOURNAL ARTICLES OR CREATIVE WORK WITH A FOCUS ON SUSTAINABILITY ISSUES OR PROJECTS:

Duckenfield, Marty, Patricia Connor-Greene, Mary Taylor Haque, and Cassandra Bernard. Service Learning at Clemson University-A Work in Progress. NSEE Quarterly. National Society for Experiential Education. Vol. 24 (4): 22-26. Summer 1999.

Haque, M.T. ; Tai,L. and Vander Mey B.J. "Horticulture, Planning, Landscape Architecture and Sociology" in S. Madden, ed. Service Learning Across the Curriculum: Case Applications in Higher Education. Lanham. MD: University Press of America..

Holcombe, Veronda and Mary T. Haque. "Educating the Public about the Design and Implementation of Sustainable Landscapes for Low-income Communities." Abstract. HortScience Vol. 35, Number 3, p. 510. June 2000.

PRESENTATIONS ON SUSTAINABILITY TOPICS AT PROFESSIONAL SOCIETY MEETINGS

Holcombe, Veronda and Mary T. Haque. "Educating the Public about the Design and Implementation of Sustainable Landscapes for Low-income Communities." American Society for Horticultural Science 97th International Conference. Orlando, Fla. July 24, 2000.

Tai, Lolly and Mary Haque. "Integrating Teaching, Research, and Service: The Case of the Three Interlocking Circles." Poster presentation. The Council of Educators in Landscape Architecture (CELA) meeting. University of Guelph, Guelph, Ontario, Canada. August 4, 2000.

AWARDS ON SUSTAINABILITY RELATED PROJECTS:

Student advisee Jennifer Dukes won the top Clemson University Service Learning Award for her work on sustainable landscapes. Award presented by President Barker at the 2000 Service Learning Celebration. Clemson University Madren Center. Clemson, SC, April 19, 2000.

Student advisee Veronda Holcombe won 1st Place in the Collegiate Branch Oral Competition for her paper entitled "Educating the Public about the Design and Implementation of Sustainable Landscapes for Low-income Communities" presented at the American Society for Horticultural Science 97th International Conference. Orlando, Fla. July 24, 2000.

Tree Conservation and Home Site Development Guide

The book entitled, *Tree Conservation and Home Site Development Guide*, is "hot off the press," and the National Garden Clubs, Inc. will begin to distribute 1100 copies free of charge to HFH affiliates via their network of local garden clubs the week of May 20. The National Wildlife Federation will also soon begin selling the remaining copies via their web site at: <http://www.nwf.org/backyardwildlifehabitat/thehabitatshop.cfm>

The publication won a 2002 American Society of Landscape Architects Regional Merit Award presented at the Tri-State meeting in Atlanta, Georgia, on 20 April. The organizations including SUJ, that helped fund the book are recognized on page three with much gratitude. Our goal is to communicate ideas for sustainable development in a "friendly" manner that can be understood and appreciated by people from a variety of educational, cultural, and socio/economic backgrounds. The book addresses many neighborhood, community, environmental, and educational issues, and we hope that it will successfully promote good design, sustainability, and environmental stewardship both locally and globally.