

The Accidental Sustainability Agent

Mark Apel

Area Associate Agent
Cochise County/ Arizona Cooperative Extension
University of Arizona

Christopher Jones

Agent
Gila County/Arizona Cooperative Extension
University of Arizona

Daniel McDonald

Associate Agent
Pima County/Arizona Cooperative Extension
University of Arizona

Keywords: Cooperative Extension, Extension Agents, Land Grant Universities, externships, sustainability

Abstract: While a number of universities across the nation have sustainability education programs, land grant universities and their Cooperative Extension departments are in a particularly advantageous position to foster sustainability education. At the University of Arizona (UA), this is being accomplished through its Cooperative Extension cadre of education programs in agriculture; youth development; natural resources; horticulture; family, consumer and health sciences; and community and economic development. A working group within UA Cooperative Extension has been tasked with evaluating the reach of sustainability concepts while developing opportunities for its faculty to further integrate sustainability education into its programs, such as through student externships. Preliminary evaluation results indicate that Extension's programs positively embody the concepts of sustainability without creating the need for new, deliberate programming around sustainability education.

Mark Apel is an area extension agent in Community Resource Development. Mark works with community organizations, elected officials, planners and land owners in Cochise, Graham, Santa Cruz and Pima counties, along with other faculty at the University of Arizona in the disciplines of land use planning, sustainable development/design, climate change, natural resources and economic impacts. Mark has over 25 years of experience in environmental stewardship and land use planning and has a B.S. in Environmental Resource Management from Pennsylvania State University (1982) as well as an M.A. in International Affairs from Ohio University (1987).

Christopher Jones is the University of Arizona's Extension Agent for horticulture and natural resources programs in Gila County, Arizona. His programs include addressing climate change and natural resource issues since 2003 and supporting a local farmers' market since 2011. Chris earned his master's degree in renewable natural resources studies at the University of Arizona in 1995.

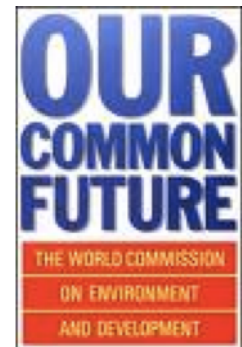
Dr. Daniel McDonald is an Area Specialist with Arizona Cooperative Extension working with school districts and community organizations to improve access to nutrition and physical activity resources. He recently played a key role in implementing the Communities Putting Prevention to Work grant through the Pima County Health Department. His expertise includes designing and implementing program evaluations within Cooperative Extension.

Introduction

A number of universities, especially public Land Grant institutions with Cooperative Extension programs across the nation, have dedicated resources and programs pertaining to sustainable living and sustainable development. These include the University of Florida's Sustainable Floridians and Living Green programs; Utah State University's Sustainable Living program; and the University of Maine's Center for Sustainable Living to note a few. As it is for most of us, there is a growing imperative to do more with less, and many people are finding these programs to be just what they need to adjust to a changing quality of living standard. Likewise, universities across the nation also seek to endure shrinking budgets and decreased state funding year after year. These timely sustainable living education programs may very well fall victim to budget cuts unless universities are able to capitalize on the resources they already have. Nevertheless, the nation's Cooperative Extension system remains the ideal vehicle to address sustainability education because of its grassroots strengths and connection with university research and learning. This article will feature the University of Arizona (UA) Cooperative Extension's efforts in educating both its faculty and the state's residents in the principles of sustainability, *without* deliberately creating new programming in sustainable living education. Hence, the 'accidental' sustainability agent.

Sustainability and the Land Grant University Mission

Sustainability, as a concept, has had a difficult time being understood by the general public. Michael D. Lemonick, in his 2009 *Scientific American Earth 3.0* article "Top 10 Myths about Sustainability" notes that the term "*conjures up a similarly vague sense of environmental virtue.*" In reality, the most commonly used definition of sustainable development was established in the 1987 publication *Our Common Future*, otherwise known as the Brundtland Report, named after Norwegian Prime Minister Gro Harlem Brundtland, the chair of the United Nations World Commission on Environment and Development. In that report, sustainable development was defined as "*development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*" (Brundtland, 1988). It was this commission's research and their subsequent report that broadened and demonstrated sustainable development's inextricable link to social and economic issues as well as environmental health.



The 1987
"Brundtland Report"

Land Grant Universities across the nation have the mission to reach out to their communities with the latest research-based information through their Extension faculty, specialists, and staff. This mission was established through the Morrill Act of 1862 (Land Grant College Act), Hatch Act of 1887 (Experimental Research Station Act) and the Smith-Lever Act of 1914 (Cooperative Extension Service Act). Traditionally, county Extension services have been associated with agriculture, but now also include many other areas and disciplines, notably, youth development; natural resources; horticulture; family, consumer and health sciences; and community and economic development. Direct contact with clientele and demonstration projects are still key

components of extension education just as it was when the program was created. With this tradition, Cooperative Extension programs available through the nation's Land Grant Universities are well suited to address the issues of sustainability.

In order to address Extension's role in sustainability education, the National Network for Sustainable Living Educators (NNSLE) was formed. It is comprised of multi-disciplinary Extension faculty from many of America's land grant universities, as well as personnel from USDA's National Institute for Food and Agriculture (NIFA). In 2008, NNSLE released a white paper titled "A Vision for Relevance" as a call to Extension personnel nationwide to actively engage in sustainability education, for the sake of future generations and for the health of the planet. In their paper they note, "*In a more populated, urbanized, and highly interconnected world, adapting to change requires understanding the complex interactions between human societies, economic development, the ecosystems of working lands, and those of natural areas. We need a crash course in how to live in synch with Earth's limits for humans. We need to focus on inter-generational transfer – just as we do with family resources. Living within those bounds is the real meaning of 'sustainable'*" (Elliott *et al.*, 2008). A version of this paper was published in the *Journal of Extension* and presented at the National Extension Directors and Administrators meeting in 2008. It has been distributed widely to Extension faculty throughout the nation. The response to this call to action was increased participation in NNSLE by other university sustainability educators. In turn, this resulted in several publications and an online course related to climate change and living sustainably, all developed by this team of Extension sustainability educators from across the country.

University of Arizona Cooperative Extension – Answering the Call

The University of Arizona is the Land Grant University for the state of Arizona and the home to Arizona's Cooperative Extension, which is a department within the UA's College of Agriculture and Life Sciences. While UA Cooperative Extension has no specific sustainable living education program, it does have a full complement of outreach and educational programs in natural resources, agriculture, community and economic development, youth development and family, consumer and health sciences. Cooperative Extension has faculty, educators and offices in all of Arizona's 15 counties as well as several tribal reservations. The Environment and Sustainability Signature Program Team (the Team) is made up of Extension agents and specialists with expertise in a variety of disciplines including water resources, climate science, land use planning, forestry and economic development. Between 2005 and 2008, the Team was responsible for organizing and convening four workshops on climate change around Arizona for natural resource and land managers. In April of 2009, the Team met to discuss new strategies for delivering climate science information. It was here that the topic of sustainability, as it relates to climate change and to Extension programs, emerged as a new direction for the Team. While working groups of faculty are fairly common at many universities to address a variety of issues, the longevity and productivity of this particular team speaks to the importance of climate change and sustainability.

Assessing Extension's Capacity for Sustainable Living Education

Before pursuing any particular strategy, the Team deemed it necessary to understand how the concept of sustainability and its attendant principles were already integrated into UA Cooperative Extension programs. To assess its extant capacity, a survey was distributed to all Extension agents, specialists, and staff (N = 285) in the fall of 2009. Extension personnel were recruited to participate via an email containing a link to an online survey (developed through SurveyMonkey®), with follow-up reminders using the Dillman method for online surveys (Dillman, 2007). The study was reviewed and approved by the University of Arizona Institutional Review Board. There were ninety-two respondents (32% response rate): agents = 34%, specialists = 30%, and staff = 36%.

Survey participants were asked to respond to several items pertaining to their Extension programs and how sustainability concepts were incorporated into that programming. They were asked to indicate up to three programs that incorporated sustainability concepts through workshops, factsheets, curricula, or other means, based on the definition provided:

Any activity or practice that takes into account all of its consequences in a positive way through: maintaining or increasing a high standard of living without compromising the ability of future generations to do so; the health of the environment; and fostering vibrant, equitable, healthy communities.

Almost all respondents (96%) indicated that they were incorporating sustainability concepts into their work.

Respondents were then asked to indicate which of the sustainability concepts, provided as a list on the survey, applied to their programming, or they could furnish their own concept if an appropriate option was not available.

Sustainability Concept	Number of Respondents	Percent of Total Respondents*
Conserving natural resources (water, arable land, biodiversity, range, habitat, etc.)	86	93%
Promoting use of renewable resources	62	67%
Minimizing fossil-fuel related inputs	37	40%
Maximizing benefits to environmental, social and economic Systems	87	95%
Reducing risks to human health	84	91%
Reducing negative impacts on the environment	81	88%
Minimizing impacts to health care systems though Vol. 4, January 2013 ISSN: 2151-7452 =prevention practices	39	42%
Increasing youth's interaction with nature	60	65%
Fostering the practice of reduce, re-use and recycle	61	66%
Promoting smarter consumer and personal finance choices	37	40%
Adapting to drought	57	62%
Promoting locally grown food	52	57%
Fostering smarter transportation alternatives	15	16%
Other (please specify): Prevention of Point Source and Non-point source contaminants in watersheds; creating means of slowing down runoff through watershed management; Promoting sustainable economic activities and a diversification of the economic base; Adapting to fire as a natural process in wildland ecosystems; Food Planning and Preservation; Community Capacity Building; Promoting school readiness of children 0 to 5 and over health and well-being of children.	14	15%

N = 92 *Percentage will total to more than 100% as respondents were permitted to select more than one concept.

The results of this assessment indicate that although UA's Cooperative Extension has no sustainability education program per se, a high degree of sustainability principles are well-embedded in all of its programs – agriculture, youth development, natural resources, family, consumer and health sciences, community and economic development.

Now What?

The Team was keenly interested in acting on the findings of its assessment in ways that would increase the engagement of fellow Extension personnel in sustainability education. The initial assessment indicated a clear need for more linkages and information between Extension agents working in their respective counties around Arizona and the sustainability resources found on campus. The University of Arizona is endowed with a wide-range of sustainability expertise in natural resources, agriculture, renewable energy, green building, community designs, health and nutrition, and consumer sciences. The Team's assessment of sustainability in Extension programs helped them understand where there might be gaps in knowledge in Extension and

simultaneously inspired the Team to bridge those gaps by reaching across departments and colleges for that knowledge.

As a result of the assessment, a mini-summit in sustainability was held in May, 2010 on the University of Arizona campus. This event was attended by 48 faculty, specialists, administrators and staff from Extension and various other programs and supported by the President of the University as well as the Dean of the College of Agriculture and Life Sciences. Presentations



Dr. Soyeon Shim, former Director of UA's Norton School of Family and Consumer Sciences, presenting the school's consumer and environmental sustainability initiative to Extension faculty in 2010.

were made by faculty from across the University spectrum of programs around sustainability, including carbon sequestration programs in the School of Natural Resources and the Environment, a new Consumers, Environment, and Sustainability Initiative in the Norton School of Family and Consumer Sciences, outreach activities in sustainability in the College of Architecture and Landscape Architecture, student-driven sustainability projects around campus, and the College of Engineering's new Practice School of Sustainability. Evaluations of the mini-summit indicated a strong overall interest on the part of participants in pursuing more sustainability resources that would enhance their programs.

Break-out group discussions at the mini-summit led to a proposal to match University of Arizona students with Extension agents around the state to work on sustainability projects. The Team has since initiated its Externships in Community Sustainability program that provides opportunities for students to learn and serve local communities through various sustainability projects working with Extension agents in their respective counties, over the course of a summer semester. The key distinction between typical internships and the Team's modified definition of externships is that students are bringing particular skills and applying them in service to their communities, through Cooperative Extension, hence the term 'externships.'

Community sustainability projects are considered as multi-disciplinary activities involving community members and/or organizations, Extension faculty, campus resources and the extern. They foster the enhancement of social and natural resources, address community needs and contribute to community resilience. In its second year, the Team has overseen a total of 12 projects around the state including the installation of rainwater harvesting tanks, farmers' markets start-up and management, teachers' summer training on a sustainability curriculum, community garden start-up on tribal lands, and integrated pest management research. The projects were all conducted during summer semesters and involved community participation. The program's costs are supported by a small grant from the University of Arizona Green



Graham County Extension Director Bill Brandau working with UA extern installing a rainwater harvesting tank.

Fund, which is funded by UA students as part of their tuition fees, an assessment of \$24 per student per year.

Because of its success, the Team is keenly interested in institutionalizing the Externships in Community Sustainability program within Cooperative Extension. In addition to University support, i.e. the Green Fund, the Team is exploring outside funding resources to maintain the program over the long term.

Lessons Learned

To increase our understanding of how efforts undertaken by the team over the past several years affected individuals directly involved, a couple of follow-up assessments were conducted. The first follow-up assessment involved reviewing the annual reports completed by Extension faculty (agents and specialists) through a keyword search. The second assessment involved key informant interviews of the students and supervisors participating in the pilot externship project. The method and results of each assessment are described below:

Keyword Search: The keyword search involved conducting a word search of all 130 annual reports submitted by Extension faculty for the 2010 calendar year. The purpose was to determine how variations on the word “sustainable” were being used to describe ongoing Extension programming. No identifying information was used in the review. Variations on the word sustainable (e.g., sustain, sustainable, sustainability, sustaining, sustained) were identified in 45 annual reports and used 87 times (sustain = 7, sustainable = 44, sustainability = 26, sustaining = 8, and sustained = 2). This is, admittedly, a very crude way of assessing the use of the word “sustainable” and generated many variations on how the words were used to describe programming. A more refined analysis is planned for the future to obtain more useful information.

Key Informant Interviews: Three externs and their supervisors were interviewed six months after participating in the externship pilot project, which took place over the summer of 2011. Three members of the sustainability team conducted the interviews, with each interviewing one extern and their respective supervisor. A set of interview questions was developed and interviews were conducted by phone. Notes were taken during the interview; no recordings were made. Notes were transcribed and distributed to a team of six sustainability team members who conducted a content analysis of the transcripts (Hsieh and Shannon, 2005). Three primary themes emerged from the analysis of the data:

- Personal impact (e.g., participation in externship program increases independence and self-reliance of extern)
- Extension and Community impact (e.g., externship program builds ties to the community; builds capacity; further establishes Extension identity in communities)
- Sustainability impact (e.g., externship program increases awareness of sustainability issues; and provides evidence of behavior change)

A manuscript is being developed to further elaborate on these findings as they relate to sustainability education and youth development.

It was through common principles of sustainability that the Team was able to assess the degree that programs in UA Cooperative Extension already incorporate the concept of sustainability. As the assessment demonstrated, UA Cooperative Extension is actively educating stakeholders throughout the state on the principles of sustainability while not necessarily referring to the term itself. For example, 70% of the respondents indicated that the principle of “*reducing risks to human health*” was incorporated into their particular Extension program. Sustainability proponents understand that programs to reduce health risks, such as teaching nutrition or encouraging physical activity, are key to reducing overall social health care costs. Healthier lifestyles and lower health care costs can translate into more resilient communities and a higher quality of life. Outdoor recreation, as one vehicle to a healthier lifestyle, has been shown by an abundance of research to engender a greater respect for the environment. This one principle – reduce risks to human health – embodies the social, economic and environmental elements of sustainability. The concept of sustainability can be found in nearly all of UA Cooperative Extension’s programs by identifying the principles that are the underpinnings of Extension’s education efforts. The Team is developing an evaluation protocol to further assess the degree to which sustainability education is embedded in Extension outreach programs and how that has changed over the last several years.

Conclusions

While the concept of sustainability may seem vague to some, it is easier to translate its meaning through common principles, such as conserving natural resources, recycling, driving less, or promoting healthier diets and nutrition to reduce health care costs. Extension gives people the knowledge to connect the dots between their day-to-day choices and the consequences related to climate variability and dwindling resources – both economic and natural.

As demonstrated by Cooperative Extension’s Environment and Sustainability Signature Program Team, the Cooperative Extension system can be particularly effective to help the country’s citizens create more sustainable households and communities. This is done not just through programs specifically designed to address sustainability, but through well-established programs and cooperative demonstrations that have helped farmers, ranchers, businesses and common people to make educated choices, which has played a role in improving the American standard of living for over 100 years. Just as when the congressional acts that established the Land Grant Colleges, Experimental Stations and Cooperative Extension system, decision makers and legislators were dealing with various economic issues and had hard choices to make about budgets. They chose to invest in education as a solution. On a warming planet with seven billion inhabitants, Cooperative Extension programs that help people put sustainability theories into practice are more important than ever. May we still choose to invest in education as the solution.

References

Bruntland, G. (ed.), (1987). "Our common future: The World Commission on Environment and Development." Oxford, United Kingdom. Oxford University Press.

Crosby, G., C. Elliot, L. Hyde, L. McDonell, M. Monroe, D. Rashash, W. Sheftall, V. Simon-Brown, T. Worthley, and L. Tupas. A vision for relevance. National Extension Directors and Administrators Meeting. February 2008. San Diego, CA. Retrieved from <http://www.jcep.org/NNSLEwhitepaper.pdf>

Dillman, D. A., (2007). Mail and internet surveys: The tailored design method. Hoboken, New Jersey: John Wiley & Sons.

Hsieh, H., and Shannon, S.E., (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15: 1277. Retrieved from <http://qhr.sagepub.com/content/15/9/1277>.

Lemonick, M., (March, 2009) Top ten myths about sustainability. *Scientific American Earth 3.0*. Retrieved from <http://www.scientificamerican.com/article.cfm?id=top-10-myths-about-sustainability&print=true>