



May 31, 2009

Michele Simmons
Research, Education, and Extension Office (REEO)
U.S. Department of Agriculture
Mail Stop 0114
1400 Independence Avenue, SW.
Washington, DC 20250-0114.

RE: REEO Roadmap

I am writing on behalf of the United States Agricultural Information Network (USAIN) to respectfully provide our perspective on some issues we feel should be included in the Research, Education, and Extension Office (REEO) Roadmap.

USAIN (usain.org) is an organization of over 150 agricultural information professionals that provides a forum for discussion of agricultural issues, takes a leadership role in the formation of a national information policy as related to agriculture, makes recommendations to the National Agricultural Library (NAL) on agricultural information matters, and promotes collaboration and communication among its members. USAIN was created with the support of the NAL in 1988. Since its inception, USAIN has testified before Congress, played an advisory role in the National Agricultural Text Digitizing Project, written a national agricultural literature preservation plan, served on blue ribbon panels to review NAL services, and participated in the selection process for new NAL Directors. When the Farm Bill is up for consideration in Congress, we have drafted letters to Congress urging improved support for the NAL. Our members are skilled librarians with knowledge of the modern theories, principles, practices, techniques, and policy issues pertinent to the current practice of librarianship and information science. Many of our members work at Land Grant institutions and are experienced in acquiring, organizing, and preserving scientific and agricultural data. It is the belief of the USAIN Executive Council that we can provide valuable input as you plot the itinerary of the next USDA Roadmap.

USAIN's three main recommendations for the REEO Roadmap involve:

1. Providing increased funding for the National Agricultural Library (NAL) for:
 - a. Digital projects
 - b. AgNIC
 - c. Improving the physical structure of the NAL.
2. Developing a Public Access Policy for the research funded by the USDA.
3. Supporting the development of a digital agricultural archive for USDA-funded research articles, Land-Grant university agricultural experiment station materials, and extension resources.

Through this lens, we will address the six questions in the REEO Roadmap solicitation.

Katie Newman, Ph.D.
USAIN President, 2008-2009

Biotechnology Librarian
Biotechnology Information Center
2130 Institute for Genomic Biology
1206 W. Gregory Drive, MC 195
Urbana, IL 61801-3832

Email: florador@illinois.edu
Phone: (217) 265-5386
FAX: (217) 244-1800

1. What types of current and future critical issues (including those affecting citizens, communities and natural resources) does agriculture face that no USDA entity could address individually?

Locating alternative energy sources is a critical issue facing not only agriculture, but all sectors and communities in the United States. In addition, food security issues are receiving new prominence both in developed and developing countries. Additional funding and resources are essential to identify new technologies that will underlie the development of alternative energy sources and new food security measures. The agriculture sector, supported by USDA research money, will have a major role to play in creating sustainable biofuels and wind energy. At the same time, new crops and new uses for current crops need to be identified and cultivated (such as *Miscanthus* as a source for cellulosic biofuels). These developments will significantly change and improve the quality of both rural and urban communities.

Although much of this novel research will occur in our nation's universities as well as in the private sector, broader access to tax-supported, peer-reviewed research literature would benefit the development of new technologies among our citizenry and the scientific and policy communities throughout the world. Currently much USDA-funded research output is locked behind the electronic firewalls erected by publishers, available only to those associated with institutions that can afford to subscribe to the various journals. This is why we urge REEO and the USDA to develop a public access policy (similar to that developed by the National Institutes of Health (NIH), publicaccess.nih.gov) that would mandate that all research articles that flow from USDA-funded research be made publicly available to all. Studies have shown that research articles that are openly accessible are cited more – that is, are used more. The NAL has created a publicly accessible database, the National Agricultural Library Digital Repository (NALDR). We would like to see the NALDR expanded to include all articles that are the result of USDA-funded research, whether or not the principal investigator is an employee of the USDA. In order to achieve this mandate, the NAL would require additional funding.

Additionally, there are critical agricultural resources being lost as a generation of faculty retire from the nation's Land-Grant universities and colleges, or that have limited access beyond local institutions due to the lack of a national agricultural repository and search system that provides dynamic and customizable search capabilities. These include more than 100 years of agricultural experiment station reports, bulletins, and data sets as well as extension bulletins and synthesis tools.

By creating 24/7 access to these resources through a distributed, multi-institutional system employing deep web search capabilities to mine content for new knowledge relationships, scientists, the American public and private sectors will have the ability to mine content for new knowledge relationships and identify solutions to complex interdisciplinary problems. The result? A more innovative and competitive agricultural sector.

2. What criteria should USDA use to prioritize agricultural science (i.e., research, education, and extension) investments to address these issues?

USDA-funded research is broad and nearly all-encompassing in scope. Research outcomes are most often published in highly respected, peer-reviewed journals. USAID urges as a first priority that all of it be made publicly available.

At the same time, research and extension are inseparable partners in the information stream. It is admirable (and unique) that, through the extension service, much current research is digested into a form that is suitable for non-scientists to read and use. This definitely needs to continue. In fact, we urge the USDA to extend its outreach and community engagement efforts by providing essential support needed to expand the critical efforts of county-level extension services for producers, youth, and families. We also urge the USDA to consider the impact of its research and extension services on the global agricultural community as well. On a global scale, local research and development projects would benefit from having access to USDA-

funded primary research articles and the wealth of research and extension information and data located in Land-Grant universities. Although eXtension provides access to some of this information, it does not focus on gathering and preserving the actual documents. The NAL should be the primary residence of these materials and be the backbone to eXtension's synthesized resources.

3. How might USDA better coordinate agricultural sciences among its various agencies and with its partners?

For well over 14 years the NAL has sponsored the voluntary partnership AgNIC (Agriculture Network Information Center, www.agnic.org), which selects quality agricultural information sources that are readily available on the Internet for inclusion in the free AgNIC database. AgNIC partners (currently 60) represent institutional commitments from Land Grant universities, U.S. and international agricultural organizations, and NAL information centers; they are professional librarians, extension experts, and information specialists with advanced degrees in specific subjects. All the websites in the AgNIC web portal are described and cataloged by AgNIC partners, and are publicly and freely available. AgNIC partners also create resources and tools to assist customers in accessing key information on selected topics and develop concentrated subject-specific sites on topics as diverse as animal waste management, cultivating blueberries, raising swine and cattle, maple syrup, invasive species, bees & pollination, etc. The searchable and browsable AgNIC portal guides the public to authoritative web resources on topics that cover a full range of agriculture, environmental, and food related disciplines.

Up to this point, AgNIC has succeeded with very little monetary support -- just enough to bring the partners together periodically, provide small grants for digitization or development projects, and to support the web-based database. AgNIC partners participate in building the resource on their own, taking time from their already busy institutional responsibilities and projects. AgNIC is a strong and vital program, and globally makes a difference. It is heavily used, with over 150 million web site hits in 2008. It connects those without ready access to information to freely accessible full-text and other Internet resources.

Additional funds would be used to provide grants across the Land Grant system that would be used to digitize agricultural documents such as those on biofuels, organic agriculture, and relevant topics in order to provide broad access to this information globally. AgNIC would focus on digitizing significant, heavily used, public domain documents, which would greatly expand their availability and use.

The AgNIC partnership encompasses institutions with large and small capacity. Funding could also be used to support capturing the digital publications from partner institutions such as the 1890 Land Grant institutions or Tribal Colleges who, due in part to tight fiscal constraints, are unable to establish repositories but have valuable digital content to provide. This gathering of information would further complement eXtension, which focuses on synthesizing current information.

USAID recommends that USDA's eXtension (about.extension.org/) and AgNIC collaborate to better achieve their common goals to provide useful information to the citizenry. eXtension's strength is primarily synthesizing information and an interactive "Ask the Expert" service; whereas AgNIC focuses on creating an underlying knowledgebase of publicly available information and by reformatting historically important print materials to digital for broad access. These two approaches are not duplicative, but complement each other nicely.

4. What are some examples where agricultural sciences are successfully coordinated for maximum benefit? Why are they successful?

AgNIC is an example of successful coordination of efforts because it was built ground-up, based upon the ability and expertise of the individual units with the underlying premise that the sum of the whole is more effective than its parts. AgNIC has been successful due to the passion its individual members bring to the venture of providing quality agricultural resources to whomever needs them. They have achieved synergy through their individual strengths. As the AgNIC site details,

“The AgNIC alliance is made up of professionals and experts from institutions and organizations from around the world. The AgNIC membership continues to expand both in institutional members and in subject coverage in the AgNIC portal. The core practice within the AgNIC community is to provide customers with a broad range of quality information. Other sites often “harvest” information from the Internet with no real assessment or review of the quality of the information or the reliability of the source. The AgNIC members do not attempt to be comprehensive, nor do they limit selections to a set number or from a specific community. AgNIC partners select information and links to content that provide significant and unbiased information representing a full range of research and practice.”¹

AgNIC has been able to award very small projects, typically about \$5,000 each, to several partners each year for the past 5 years to digitize older documents. Over 35 projects have been supported with funds from NAL with tremendous success. These projects have digitized over 4,000 documents, including all of the almost 100 years of Farm Bills and supporting documentation. This program is highly successful, but needs additional funds to do more and reach more people.

The extensive involvement of Land-Grant institutions and related partners in AgNIC clearly demonstrates its ability to coordinate effective information services and maximize limited resources.

5. What are some examples where agricultural sciences are not coordinated effectively? Why is coordination lacking? What are the barriers?

Agriculture spans the gamut of topics, from food to families, and from small business development to natural resource management. The fields of specialization often do not intersect, and work programs become fragmented. As programs change and resources become more limited, programs work hard to define themselves in a new light. In an effort to redefine programs the “big picture” is often overlooked. There is a role for both AgNIC and eXtension, but coordination of the two initiatives has not yet been achieved. Both are excellent programs with much to offer.

With additional funding, AgNIC would be able to provide more digital access to relevant agricultural materials and develop deeper subject guides; adequate funding might also provide release time so the AgNIC members could develop specialized content projects which would enhance access to information.

AgNIC is uniquely positioned to leverage expertise, content, and experience with digital information to provide access to much needed agricultural and natural resource materials. AgNIC is currently underfunded and there is an economic opportunity loss to the agricultural and information community due to quality projects not being realized.

6. What else might USDA do to improve coordination of science; enhance USDA's ability to identify issues and prioritize investments; and elevate its role in science implementation and coordination?

USAIN urges the USDA to more fully utilize the talents and expertise of the NAL librarians and staff. Across the country, university and national research libraries are seeing less foot traffic but exponentially greater virtual usage of their materials. Although researchers cross the threshold of the NAL less frequently than in the past, they are increasingly knocking on its virtual doors to access their digital collections – current journal subscriptions for the USDA staff, copyright-free USDA authored materials for the world, quality web site recommendations (through the NAL and AgNIC portals), digitized older materials, and more. Electronic information technologies have raised our expectations, and the NAL is struggling to meet these. As the NAL's Blueprint for Success (2008) says, "NAL now needs to find ways to make its seventeen-story building – and all that's within it – fit elegantly on a three-inch screen."² This is necessary if the NAL is to meet its 1862 mandate, which is, as Abraham Lincoln said, "to acquire and preserve ... all information concerning agriculture."

As stated in the NAL Blueprint,

"For the past ten years, the budget has barely kept pace with inflation, severely hampering the Library's ability to maintain its collections and curtailing the development of new services. ... No single library, or even group of libraries, can do what NAL does. No single library or group of libraries holds the kind of materials NAL does. No single library or group of libraries can serve the national mission entrusted to NAL. Whether in the fields of biofuels, invasive species, or organic farming, whether serving consumers, researchers or members of Congress, NAL provides equitable access to its one-of-a-kind collection and unparalleled service to the Nation."²

USAIN wholeheartedly agrees with NAL's self-assessment (Blueprint, 2008) that the NAL is a national treasure, holder of vast heritage assets, and an immensely valuable resource to the fields of agriculture and the environment. It is in dire need of increased funding if it is to meet the research needs of agricultural researchers and the populace. The NAL has a responsibility to preserve its valuable collection of treasures from the past – our agricultural heritage -- but it is struggling to accomplish this within the walls of its aging and flagging 1960s era building and aging technologies.

The NAL has been a leader in the provision of digital access to agricultural materials; however, it could do so much more with adequate funding. Besides providing access to older materials, if the USDA developed a public access policy the NAL could provide the technical expertise to function as a "PubAg Central" (analogous to the NIH PubMed Central). In Agricola, it already has the experience of creating a database of agricultural research articles (analogous to the NIH PubMed). If the USDA were to mandate that all journal articles from the research that it funds be publicly accessible, the NAL could be charged with setting up a deposit system, link them to the Agricola records, and provide easy access to consumers and researchers alike. In doing so, the USDA would realize greater investment impact for the research monies it provides. The articles and full text would be discoverable through the Agricola interface, but would also be discoverable through tools such as science.gov, Google, and Yahoo. And not only researchers within the USDA or at well-funded U.S. institutions would have access to the research results, but so too would the citizenry, the private sector, students at small colleges, and researchers in developing countries.

Conclusion

In 2006, USAIN funded the writing of a White Paper, "Making the Case for a Next-Generation Digital Information System to Ensure America's Leadership in Agricultural Sciences in the 21st Century" that urged:

“the leadership of USDA, NASULGC, the agribusiness industry, and others with interests in a vital agricultural sector to strongly support a process for bringing together key players in the U.S. agricultural information system (Land-Grant Universities, NAL, Cooperative Extension, members of the private sector, concerned policymakers, scientists at the cutting edge of the information industry, and others), to develop a detailed implementation plan and phased road map for a national digital agricultural information system for the 21st century”.³

As REEO maps its way forward into the future, USAIN urges it to explore the recommendations in the USAIN Next Generation Digital Information System document. It has been said that we are in an “information revolution” and that “information wants to be free”. Given the critical importance of agriculture to national security, economic prosperity, scientific growth, and an informed public, it is imperative that access to research-based, quality agricultural information not be overlooked in the REEO Roadmap. A well-funded and technologically advanced NAL is critical to achieving this as is a well developed Public Access Policy for research funded by the USDA.

USAIN urges the USDA REEO to better leverage the money it provides through grants by setting up a portal through which all funded research output is publicly available. The NAL is poised to facilitate this access, but increased funding of the NAL is required.

Additionally, we urge greater funding be provided to the NAL so it can physically preserve its irreplaceable collections, and digitize them for greater public access. Increased funding of the NAL would also provide a revenue source for enhancing the funding of the AgNIC program.

The collections in the NAL are no less valuable than those held by the Library of Congress or the National Library of Medicine; yet the funding rate for the NAL has sorely lagged behind that provided to our other national libraries. We urge the REEO and USDA to remedy this situation by providing adequate funding to the NAL so it can fulfill its mission.

References

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Submitted on behalf of the USAIN Executive Council and Membership

Kathleen Newman, USAIN President, 2008-2009
Norma Kobzina, USAIN President, 2007-2008
Sheila Merrigan, USAIN President, 2009-2010
Allison Level, USAIN President, 2010-2011
Constance Britton, USAIN Director, 2008-2010
Barbara Hutchinson, USAIN President, 1999-2000