



Open Access and Social Networking

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Open access and social networking

Drs Diane Le Hénaff, Miguel-Angel Sicilia and Christian Stracke discuss how sharing in open access scientific resources is fostering applied research in agriculture and related fields

How would you describe the current situation regarding the spread of information about European agriculture and aquaculture?

DLH: The main challenge for agriculture is to feed all humans on the planet. To support this, knowledge has to be transferred from scientists to practitioners and policy makers. The 'Virtual Open Access Agriculture and Aquaculture Repository' (VOA3R) project offers a meeting place to discuss and find information. This is especially important for southern and developing countries.

Are you taking any particularly interesting measures in approaching open access to agricultural and aquacultural content?

DLH: My main mission for the French National Institute for Agricultural Research (INRA) is to encourage researchers towards open access. The new ProdInra policy – the INRA institutional repository – is service-orientated. A researcher can deposit his/her scientific results and get immediate services: enrichment of his/her records with the number of citations on the web from science databases, export for assessment purposes, requests for collaborations and expert analyses, etc. This content is then made available for the scientific community through international and thematic portals such as VOA3R.

What are the key features of the VOA3R platform?

DLH: The platform provides access to more than 500,000 resources from 13 content providers. It contains social features that enable users to use innovative search options. The platform allows people to list their skills, projects, activities and scientific outputs; for example, they can highlight protocols and methods used in an article and discuss them with other experts.

How does the project differ to other social platforms for researchers and scientists?

MAS: VOA3R was conceived as an extension of the existing investment in open access and institutional repositories, combined with Current Research Information Systems (CRIS), not as a replacement for them. This has important implications.

A number of existing social platforms rely on general web search engines and are thus more exposed to 'noise' from proprietary ranking algorithms, while others are basically targeted to become online reference management systems or citation systems. We do not attempt to replace existing collections and databases, but to make them available in an open platform enhanced with tools for better search, visualisation and browsing.

Regarding technical innovation, VOA3R features navigational browsing, which supports a 'berry-picking' search style; timelines and geo-localised browsing of literature; and microblogging, tailored to research needs through what we call 'research methods' vocabularies. It exploits Linked Open Vocabularies, using the UN Food and Agriculture Organization's AGROVOC thesaurus for search and recommendations, combined with keyphrase extraction techniques and tailored collaborative filtering. It is the first Linked Open Data implementation of the Common European Research Information Format (CERIF) and features a full implementation of the u-standard for CRIS.

CS: We cannot underestimate the importance of the fact that VOA3R and its communities belong to the researchers themselves and not any profit-orientated enterprise: everybody can create and maintain his/her own research community and knowledge exchange.

The project draws to its conclusion next year, after three years of actively engaging

in the promotion of community-based access to research. Would you say that it has gone according to plan?

CS: As the Quality and Risk Manager of VOA3R with full overview of all Work Packages and activities, and as international ISO Convener for QM and QA in Learning, Education and Training, I can compare. I was and am still impressed how this big consortium is cooperating and supporting one another. Many activities have been started and conducted beyond the work plan to promote the vision of open access to research by the researchers themselves, including the initiated Association for Open Access. VOA3R is a true and successful example of community-based cooperation following a common objective with shared understanding.

Has the platform's performance met expectations so far?

MAS: It was challenging to design a semantic store for more than 2.5 million metadata records. After the initial pilot phase, we think that performance is moderate, though there is a need for optimisation in some areas that rely on external services. We are currently designing caching and optimisation mechanisms for those.

At what stage is your testing?

MAS: The current pilot phase is providing highly interesting insights that will drive future improvements. There is still a considerable quantity of functionality to test in VOA3R. For some functionality, the data available has still not reached a critical mass, so we will only be able to properly test those functions properly in the future, as platform usage grows.

We continue to actively encourage people to register at <http://voa3r.eu> and play with VOA3R, so that we can get the broadest feedback possible!

Reaping the rewards of collaboration

VOA3R has devised a web-based platform that provides a social network for researchers, a reference source for properly-curated research and its outcomes, and a peer-review facility for the agriculture, aquaculture, viticulture and food science communities. The portal is now in beta testing and feedback is welcomed



THE EUROPEAN COMMISSION is committed to sharing the vast knowledge-bases of research undertaken in Europe to further innovation and to support development in less affluent parts of the world. Important corollaries of this commitment are that sharing knowledge will increase the competitiveness of Europe and, crucially, where agricultural and related research are concerned, provide key inputs for responses to the urgent issue of dwindling food security in all parts of the world.

Funded by the EU Information and Communications Technologies Policy Support Programme, a three-year project was started in June 2010 with the objective of promulgating best practice by providing open access to research products pertaining to agriculture, viticulture, aquaculture, food and the environment. The 14 partners in the project come from 10 European countries, and many are universities and national research institutions.

The project is the Virtual Open Access Agriculture and Aquaculture Repository (VOA3R) initiative, which interfaces with the UN Food and Agriculture Organization (FAO)'s AGRIS information archives. The VOA3 repository is designed to extend AGRIS functionality and enrich its content with high quality academic research. It therefore has had a symbiotic relationship with AGRIS since the beginning: "Our team has worked closely with FAO expertise and their network," explains Dr Diane Le Hénaff, a lecturer in Scientific Information Management at the University of Versailles St-Quentin and the representative of the French National Institute of Agronomic Research (INRA) in VOA3R. Le Hénaff is the architect of INRA's open access policies and a specialist in federating digital information and documentation. INRA's own repository, ProdInra, is one of the contributing sources of research information to VOA3R. "Knowledge and innovation should be shared for global benefit," asserts project partner Miguel-Angel Sicilia.

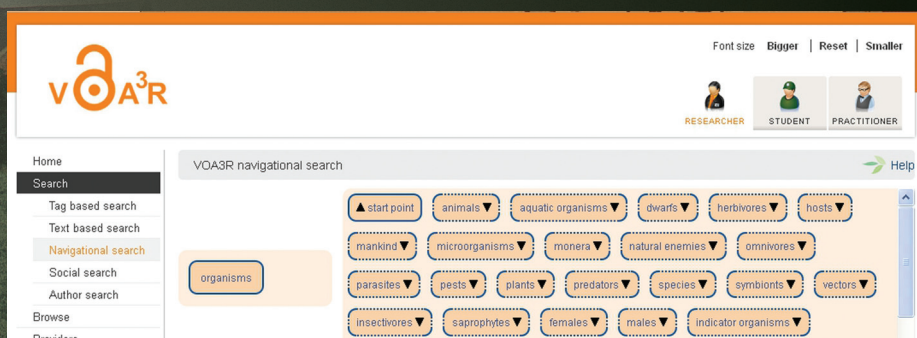
THE VOA3R PORTAL

VOA3R has developed a web portal which provides a community-based 'social network'-style interface for academics, students and researchers, as well as practitioners and enterprises in agriculture, aquaculture and related domains who either wish to access scientific products, or submit their own products for open access and wider dissemination.

Via the portal, VOA3R currently federates open access literature from 13 existing open access repositories and digital libraries across Europe, making use of standard vocabularies and classification schemes. Pilot trials started in May 2012 and the system is now available for beta use via <http://voa3r.cc.uah.es>. This offering accesses 500,000 documents and by the time the system is launched, the target content volume will be 2.5 million documents.

The VOA3R architecture complies with the principles of the Open Archives Initiative interoperability standards for efficient dissemination of content, applying Linked Open Data rules. Linked Open Data is a model whereby metadata is harvested with its provenance (ie. source web address) and the attributes that describe it and its conceptual context. Due to this, it can be linked with other similarly open and attributed metadata. Searches for content in VOA3R rely on unconstrained availability, so the matter of open use is fundamental. The VOA3R concept is that metadata ownership is per se appropriately controlled: "Open licences need to be explicit and clear; this is managed in VOA3R through a specific affiliation program for metadata content providers," explains Dr Miguel-Angel Sicilia, full professor at the Computer Science Department at University of Alcalá and coordinator of the VOA3R project.

The VOA3R system integrates the semantics of the Agricultural Information Management Standards



VOA3R MAKES SEARCHING EASY THROUGH THE 'DRAG AND DROP' NAVIGATIONAL SEARCH

Agrovoc thesaurus, which contains more than 40,000 concepts in no fewer than 22 languages and provides items in Open Linked Data.

VOA3R DESIGN

VOA3R functionality encompasses a variety of search methods and social networking constructs that add significant value to the content.

Documents are classified using standard terminology and are individually tagged. The tags can be used to mount searches for linked documents. The search facilities, meanwhile, are extensive and grouped according to the methods of text, tag, navigation, author and social search. Within these methods, the parameters cover concepts and techniques, processes and technology and time and location, to name a few. Graphical searching is enabled; browser tools are provided that enable a timeline view or a map view of search results. The emphasis is on ease of use and contextual placing.

Social networking functionality includes the ability to rate the content of documents, to make annotations and to enter reviews; newsfeeds, microblogging and social bookmarking are also supported. Users can join groups and subscribe to newsfeeds – they can, for example, 'like' items. The system also allows users to enter personal contact and history data, which is managed alongside their research contributions, so their peers and other users can contact them online or offline for discussions and to share ideas.

Institutions can join VOA3R as a research community or as a content provider, contributing repositories for harvesting. Guidance and parameters for individual and institution research publication via VOA3R are provided via the portal. Le Hénaff is keen that authors appreciate that publication via VOA3R confers appropriate status to documents, especially in terms of security from plagiarism: "I often explain to researchers that depositing their outputs in the repository can preserve the record of their authorship," she states.

CONFERENCES

The VOA3R platform has been presented at a number of conferences this year and more are planned. In January it was showcased at the Swedish University of Agricultural Sciences in Uppsala, a partner in VOA3R whose library is

one of the input repositories. It was also unveiled at a conference on open access in Paris; to the National Workshop for Innovations and to the Kenyan Quality and Standards in Learning, Education and Training conference in Nairobi, in March; and to the 7th International Conference on Open Repositories in Edinburgh, UK in July.

Future presentations of VOA3R are planned in September at the 8th AFITA conference at the National Training Institute of Farmers' Organizations in Taipei, Taiwan; at a seminar titled 'Virtual Open Access Agriculture and Aquaculture Repository and Social Network for Collaboration of Researchers' at Agrarian Perspective XXI in Prague; and at the Learning Innovations and Quality conference in October in Brussels.

FURTHERING OPENNESS

The technology used in VOA3R is itself open source and available for reuse for other applications among SMEs: "VOA3R can be reused at no cost. It covers agriculture and aquaculture, while other research communities can reuse the methodology and software tools and create their own social networks," explains Sicilia.

Professor (KR) Christian M Stracke, VOA3R Quality and Risk Manager and ISO Convener of SC36 for QM and QA in Learning, Education and Training, hopes that their initiated association for open access will soon transfer VOA3R ideas and results to other branches and subjects, enabling researchers worldwide to join, establish their own communities and exchange their interests, knowledge and research results.

Stracke, Sicilia and Le Hénaff are keen to obtain as much feedback as possible on the user experience of VOA3R while it is in the beta test stage, to gather impressions of its accessibility, usability, reliability and security to determine upgrade paths and priorities and refine requirements for future releases. The portal provides an evaluation form for collecting user views, while Sicilia, Stracke and Le Hénaff already have ideas of the direction in which they would like to take the VOA3R platform in the future: "We want to push VOA3R development more in the direction of Linked Open Data in several ways, including such things as advanced interlinking features and multi-vocabulary support for navigational search. Ultimately, we are looking towards a future of research with unlimited openness!"

INTELLIGENCE

VOA3R

VIRTUAL OPEN ACCESS AGRICULTURE & AQUACULTURE REPOSITORY: SHARING SCIENTIFIC AND SCHOLARLY RESEARCH RELATED TO AGRICULTURE, FOOD, AND ENVIRONMENT

OBJECTIVES

The VOA3R platform aims to gather open access literature in agriculture and related fields from disseminated repositories in order to offer researchers, students, practitioners a single access point to resources and social features.

PARTNERS

University of Alcalá (coordinator, Spain) • Agricultural University of Athens (Greece) • University of Duisburg-Essen (Germany) • Greek Research and Technology Network (Greece) • Swedish University of Agriculture Sciences (Sweden) • Hasselt University (Belgium) • ICROFS (Denmark) • INRA (France) • Czech University of Life Sciences (Czech Republic) • ACTA & ACTA Informatique (France) • Agricultural Research Institute (Cyprus) • CINECA (Italy) • Technological Educational Institute of Athens (Greece)

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