Information Safari: Discovering and Sharing Resources

37th IAMSLIC Conference
5th AFRIAMSLIC Conference
October 16th-21st, 2011 Zanzibar, Tanzania

Information Safari: Discovering and Sharing Resources

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Note: Program cover map of Zanzibar was created by David Bygott, courtesy of ARP Travel Group, *arppartners.com*

Information Safari: Discovering and Sharing Resources

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IAMSLIC thanks our generous sponsors and invites you to visit the following sponsors at their exhibit tables in the Zanzibar Beach Resort room, adjacent to our conference meeting room:

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Sunday, October 16, 2011

1000 - 1700	Registration Open at the Zanzibar Beach Hotel	Lobby area
1030 - 12 noon	Executive Board Meeting	
1400 - 1600	Tour of Stone Town	Meet in Lobby
1800 - 2100	Welcome Reception at the Zanzibar Beach Hotel	

Information Safari: Discovering and Sharing Resources

Monday, October 17, 2011

0815 - 0845	Registration and Speaker Setup
0845 - 0900	Opening of Conference, Welcome & Announcements Marcia Croy-VanWely, IAMSLIC President, Amy Butros, IAMSLIC President-Elect, Edna Nyika, Host, AFRIAMSLIC Regional Representative, and the Honorable Minister, Haroun Ali Suleiman, Ministry of Labor, Economic Empowerment and Cooperatives.
0900 - 1000	**Guest Speaker: Prof. Yunus Mgaya, Deputy Vice Chancellor Administration, University of Dar es Salaam. *Aquaculture and Food Security in Tanzania.***
1000 - 1030	**Coffee & Tea Break (Opening of Guin Auction & Exhibits)**
1030	**Session 1: Supporting Institutional Research by Discovering, Locating and Organizing Resources** Moderator: Geoffrey Salanje, Bunda College of Agriculture, University of Malawi, Lilongwe, Malawi.
1030 - 1115	*Discovering and sharing information in use of e-resources to enhance use of scientific literature.* Presenter: Isedorious Agolla, Kenya Marine and Fisheries Research Institute, Mombasa, Kenya.
1115 - 1200	*The role of NaFIRRI Information Centre in assisting researchers and educators*. Presenter: Alice Endra, National Fisheries Resources Research Institute (NaFIRRI), Uganda.
1200 - 1245	Institution & Project Updates from Attendees
1245 - 1345	**Lunch**
1400	**Session 2: Creating New Resources: Adventures with Unique Databases and Collections** Moderator: Maria Kalentsits, Fisheries & Aquaculture, FAO, Rome, Italy
1400 - 1445	*Creation and development of the electronic library for Fishery Institutes of Russia.* Author: Liudmila Kulagina, Russian Federal Research Institute of Fishery and Oceanography, Moscow, Russia. (Presenter: Maria Kalentsits)
1445 - 1530	*Making every penny count: building a world-class trout and salmonid collection on a small budget.* Presenter: James Thull, Associate Professor, Special Collections & Reference Librarian, Montana State University, Bozeman, Montana, USA.
1530 - 1545	**Coffee & Tea Break (Visit Exhibits & Guin Auction)**
1545 - 1615	*Our Safari in Migrating from UDF to LC.* Presenter: Lucas Kilemba, Mombasa Polytechnic University College, Kenya.
1615 - 1730	IAMSLIC Business Meeting I
1745 - 1845	IAMSLIC Executive Board Meeting II
1800	Dinner on your own

Information Safari: Discovering and Sharing Resources

Tuesday, October 18, 2011

0845 - 0900 Speaker Setup and Registration

0900 - 0915 Announcements

0915 **Panel Session: Leadership in Resource Management and Access: Experiences with IODE, ODINAFRICA and Aquatic Commons.**
Moderator: Linda Pikula, OceanDocs Steering Group, Chairperson of the Group of Experts on Marine Information (GEMIM)

0915 - 1000 *AgriOcean Dspace, a joint initiative of the United Nations agencies of FAO and UNESCO- IOC/IODE.* Presenter: Marc Goovaerts, Director, Library, Hasselt University, Coordinator, OceanDocs, UNESCO-IODE, Belgium

1000 – 1030 Coffee & Tea Break (Posters, Exhibits & Guin Auction)

1030 - 1115 *AFRILIB, online union catalogue of ODINAFRICA Libraries: past, present and near future.* Presenter: Arame Keita, Head of Information and Documentation Unit, Direction des Peches Maritimes, Dakar, Senegal

1115 - 1200 *Level of contribution of African countries to the development of the Aquatic Commons Repository.* Presenter: Moses Ibeun, National Institute for Freshwater Fisheries Research (NIFFR), Nigeria.

1200 - 1300 Lunch

1315 **Session 3: Sharing Knowledge, Experience, and Resources: Successful Collaborations and Joint Ventures**
Moderator: Brian Voss, NOAA Seattle Library, & Cyamus Regional Representative, Seattle, Washington, USA

1315 - 1400 *Collection of Malawi's scientific gray literature for local and international use.* Presenter: Geoffrey Salanje, Bunda College of Agriculture, University of Malawi, Lilongwe, Malawi.

1400 - 1500 Institution & Project Updates from Attendees – continued from Monday

1500 - 1530 Coffee & Tea Break (Exhibits, Posters & Guin Auction)

1530 - 1615 *VOA3R: Virtual Open Access Agriculture & Aquaculture Repository: sharing scientific and scholarly research related to agriculture, food, and environment.* Presenter: Marc Goovaerts, Director, Library, Hasselt University, Coordinator, OceanDocs, UNESCO-IODE, Belgium

1615 - 1700 *Smart fishing: using open access resources.* Presenters: Janet Webster, Head Librarian, Guin Library, Hatfield Marine Science Center, Oregon State University, Oregon, USA; and Jean Collins, Italy.

1700 - 1830 Dinner on your own

1830 - 2030 **Evening Workshop**: *Working with AgriOcean Dspace, a customized repository software for the aquatic, agricultural and oceanographic communities.* Presenters: Marc Goovaerts, OceanDocs Coordinator, UNESCO-IODE; and Linda Pikula, OceanDocs Steering Group, Chairperson of the Group of Experts on Marine Information (GEMIM).

Information Safari: Discovering and Sharing Resources

Wednesday, October 19, 2011

0830 - 0845 Speaker Setup
0845 - 0900 Announcements

0900 **Session 4: Protecting our Information and Collections: Data Gathering, Curation, and Preservation**
Moderator: Janet Webster, Head Librarian, Guin Library, Hatfield Marine Science Center, Oregon State University, Oregon, USA

0900 - 0945 *Enhancing access to local biodiversity knowledge in the Delta: experiences of the Okavango Research Institute Library*. Presenter: Zanele Hadebe, Senior Librarian, Okavango Research Institute Library, Botswana.

0945 - 1015 *Information sharing in Africa: reconciling copyright protection and access to information in grey form.* Presenter: Luke Mwale, Head of Department of Library and Information Science, Mzuzu University, Malawi.

1015 - 1030 Coffee & Tea Break (Exhibits & Guin Auction)

1030 - 1115 *Managing digital information resources: a quest for African strategy*. Presenter: Violet Ohimain, Nigerian Institute for Oceanography and Marine Research, Lagos, Nigeria.

1115 - 1200 *Marine and coastal electronic information management in ten countries in support of the UNDP GEF Agulhas and Somali Current Large Marine Ecosystems (ASCLME) Project.* Presenter: Lucy Scott, GEF Agulhas and Somali Current Large Marine Ecosystems (ASCLME) Project. Grahamstown, South Africa.

1200 - 1245 *Marine library information integration: public and private institutions in Panama.* Author: Yolanda Irene Lopez Franco, Universidad de Panamá, Panamá. (Presenter: Janet Webster).

1245 - 1345 Lunch

1400 **Session 5: Shaping the Future: Using New Technologies and Defining New Roles for Librarians**
Moderator: Lisa Raymond, MBL WHOI Library, Woods Hole, Massachusetts, USA

1400 - 1445 **Guest speaker: Prof. Elizabeth Kiondo, Executive Secretary, UNESCO National Commission**

1445 - 1530 *The Technologically challenged academic librarian: what has changed in the provision of information services in the age of social interactions?* Presenter: Pavlinka Kovatcheva, University of Johannesburg, South Africa.

1530 - 1545 Coffee & Tea Break (Last chance for Guin Auction)

1545 - 1615 *Which alternative tools for bibliometrics in a research institute?* Presenter: Marie Pascal Baligand, Electronic Resources Manager, Cemagref, Lyon, France

1615 - 1700 *Are social media the new technology for breaking the resource sharing barriers in Libraries?* Presenter: Apollo Abungu, Senior Librarian, Aga Khan University, Dar es Salaam, Tanzania.

1745 Buses depart for Banquet

1800 - 2200 Banquet at the Beach (if weather permits).

Thursday, October 20, 2011

0845 - 0900	Speaker Setup
0900 - 0905	Announcements
0905 - 0930	**Guest Speaker: Dr. Mika Odido, IODE Regional Activities Coordinator, UNESCO/IOC Project Office for IODE**
0930	**Session 6: Highlights and Developments from Resource Providers: ITOCA, ProQuest, and Inter-Research** Moderator: Marcia Croy-VanWely, Library, Fisheries and Oceans Canada, Vancouver, BC, Canada.
0930 - 0945	ITOCA – Information Training and Outreach Centre for Africa, Presenter: Pamela Marinda
0945 - 1015	ProQuest Presenter: Francois Van Wyk, South Africa.
1015 - 1045	Inter-Research: Matt Seaman
1045 - 1100	**Coffee & Tea Break**
1100 - 1200	IAMSLIC Business Meeting II
1200 - 1215	Invitation to 38th IAMSLIC Meeting in Anchorage, Alaska, USA
1215	Adjournment & Closing of Conference
1400	AFRIAMSLIC Meeting

Training & Tours Day

ASFA & OceanDocs Training: Institute of Marine Sciences Computer Room

Tours:

Spice Tour and Mangapwan Ruins

Dolphin Tour (includes transportation, snorkeling gear, boat hire & lunch)

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Abstracts of Presentations & Posters

Abungu, Apollo Kagwa. Senior Librarian, Aga Khan University, Dar es Salaam, Tanzania.
Are social media the new technology for breaking the resource sharing barriers in libraries?
Information has been defined as a resource comparable to energy and other natural resources. Information influences different sectors of our lives, personally, economically, socially, etc. Libraries and other information sectors have played the guardian role of housing information over time. New and emergent trends in information provision involving the use of modern technology has made marked differences in the ways libraries harness, store and share information under their custody as they struggle to satisfy a clientele which has become geographically scattered and more technologically savvy. This paper reviews innovations that Aga Khan University, IED EA Library is currently putting in place in order to satisfy its divergent user needs and stay relevant in the new techno-information provision setup.

Agola, Isedorious Ochola. Kenya Marine and Fisheries Research Institute, Mombasa, Kenya.
Discovering and sharing information on the use of e-resources to enhance the use of scientific literature: case study of Kenya Marine and Fisheries Research Institute Library, Kenya.
We are guided by our vision "to be a one stop provider of user focused quality library services and develop collections in support of aquatic research and promotion of sustainable utilization of Marine and Freshwater resources." The provision of documents, bibliographic searches and compilation of the current awareness product KMFRI CURRENT remains one of the core services we offer to researchers/scientists and relevant institutions. We have moved from the era when documents came courtesy of former RECOSCIX-WIO and later ODINAFRICA, most of which were hard copies and difficult to store. The library is now able to service 70% of the requests through its collection, in the building of which both RECOSCIX-WIO and ODINAFRICA played parts. Besides filling requests from within, we have also been able to service requests from outside, mostly for published papers by local scientists. The library has its own internal databases such as ASFA, KENYAN WATERS and SAMAKI, and also maintains the directories KENDIR, AFRIDIR and GLODIR. Collaboration with IAMSLIC, AFRIAMSLIC and ODINAFRICA has made it much easier to access documents that are not locally available. Online access to AGORA, HINARI, OARE, INASP and DOAJ have also enabled the library to meet some of its requests.

Baligand, Marie Pascale. Electronic Resources Manager, Cemagref, Lyon, France; Anne Laure Achard, Cemagref, Lyon, France; Amanda Regolini, Cemagref, Grenoble, France; and Emmanuelle Jannes Ober, Cemagref, Antony, France.
Which are the best alternative tools for bibliometrics in a research institute?
Nowadays, bibliometrics is a frequently used tool in scientific and technical information; it can be useful to quantify scientific production and for collective or individual evaluations. The Web of Science (Thomson Reuters ISI) and the JCR impact factor are the best-known tools. We will outline the limits of these overused indicators, especially the h factor. Alternative tools are emerging today. Our presentation will focus on comparing all these products, and their interests for librarians and researchers.

Endra, Alice. National Fisheries Resources Research Institute (NaFIRRI), Uganda.
The role of NaFIRRI Information Centre in assisting researchers and educators.
Information plays a vital role in the day-to-day decision making process of a country's organizations and policy makers. The information center has played a major role in ensuring scientists and researchers access to relevant information to enable them produce quality research products. The paper discusses the role played by E-Board, a locally established network to increase access to information available within the information center. NaFIRRI electronic board is a LAN based service that was devised to electronically facilitate information dissemination and communication within the institute. The paper looks at the different components of the E-board and the Aqua link program under the information section that was established to disseminate information on biodiversity conservation among school children and teachers. It discusses the success achieved by this program so far.

Information Safari: Discovering and Sharing Resources

Goovaerts, Marc. Director, Library, Hasselt University, Coordinator, OceanDocs, UNESCO-IODE, Belgium; Imma Subirats Coll, FAO; Sarah Dister, FAO; and Denys Slipetskyy, IBSS.

AgriOcean Dspace, a joint initiative of the United Nations agencies of FAO and UNESCO-IOC/IODE.

AgriOcean Dspace is a joint initiative of the United Nations agencies of FAO and UNESCO- IOC/IODE to provide a customized version of DSpace using high standards for metadata, thesauri and other controlled vocabularies in oceanography, marine science, food, agriculture, development, fisheries, forestry, natural resources and other related sciences. The communities supported by FAO and UNESCO-IOC/IODE are synergistic and the standards on metadata and controlled vocabularies are similar for both. Collaborating offers an opportunity to integrate in a common repository tool the best of both worlds. AgriOcean Dspace will make scientific publications in the fields of marine, agriculture and related sciences easy and freely accessible and will facilitate the publishing of research by scientists. More specifically it will enhance internal scientific communication and help involve institutional repositories with setting up OAI-compliant repositories. AgriOcean DSpace will be used by partners in the OceanDocs network who want to set up their own repositories. A training has been organized for OdinAfrica in Lomé, Togo (April 2011). The repositories will also be harvested by the AGRIS database of FAO and by VOA3R.

Goovaerts, Marc, Director, Library, Hasselt University, Belgium.

***VOA3R:* Virtual Open Access Agriculture & Aquaculture Repository: sharing scientific and scholarly research related to agriculture, food, and environment (http://voa3r.eu).**

VOA3R is a Research Consortium Project for digital libraries and stands for "Virtual Open Access Agriculture & Aquaculture Repository: Sharing Scientific and Scholarly Research related to Agriculture, Food, and Environment." The general objective of the project is to improve the spread of European agriculture and aquaculture research results by using an innovative approach to sharing open access research products. The VOA3R service will connect libraries, archives and other publication systems by providing advanced search interfaces that include specific aspects of research work (methods, variables, measures, instruments, techniques, etc.) of the particular domain. The users of the VOA3R service are researchers but also students and practitioners who either want to search for or to publish scientific research. The project is targeted to the domain of agriculture & aquaculture, as it re-uses previous models for these domains, but the technology and models integrated are to a large extent transferable to other academic disciplines. The VOA3R platform aims at reusing existing and mature metadata and semantics technology to deploy an advanced community-focused integrated service for the retrieval of relevant open content. The technology used will itself become open source, so that the model of the service can be adopted by enterprises (including SMEs) or other kinds of institutions as a value-added, community-oriented model for open access content.

Hadebe, Zanele. Senior Librarian, Okavango Research Institute Library, Botswana.

Enhancing access to local biodiversity knowledge in the Delta: experiences of the Okavango Research Institute Library.

The Okavango Delta with its unique ecosystem has attracted its fair share of researchers from all corners of the world, resulting in the creation of a wealth of knowledge. Researchers, environmentalists and policy makers alike acknowledge that the preservation of this fragile ecosystem largely depends on the availability, accessibility and unimpeded flow of information in many formats. The biggest challenge, therefore, is how do we as information specialists/librarians gather this information from the various sources, especially the grey literature and unpublished technical reports, and make them accessible not only for planners and policy makers but for all. For a long time now, the tendency has been to focus on the published scholarly reports and articles that can be accessed easily. Grey literature has often been relegated to the back burner, and as a result some of it has been lost. This paper looks at several initiatives (both local and international) in which the Okavango Institute Library and some of its partners are involved to enhance access to local biodiversity knowledge. The paper concludes by emphasizing the importance of sharing knowledge in the preservation of this unique ecosystem on which the people of the Delta depend for their livelihood.

Information Safari: Discovering and Sharing Resources

Ibeun, Moses O. National Institute for Freshwater Fisheries Research (NIFFR), Nigeria.

Contribution of African countries to the development of the Aquatic Commons Repository and the challenges in searching for information.

The paper evaluated the contribution of African countries to the Aquatic Commons repository and highlighted the problems encountered in searching for information in the system. Results showed that 82 agencies upload articles into the Aquatic Commons repository. The 82 agencies uploaded 3,867 documents. Further results showed that only 8 agencies in Africa forming 9.8% of the agencies uploading entries to the repository. The eight agencies contributed 596 entries which formed 15.4% of the total submission to the repository. Nigeria alone contributed 81.5% of African contribution which formed 12.6% of the total submission to the repository. The number of downloads as at July 2011 is 233,781. There was a general increase of 154.8% when compared with downloads as at June 2010. Nigeria downloaded 4.9% of the total downloads and 69.5% of African countries. The article suggested that the possible reasons for low level participation are: ineptitude of African Librarians and other stakeholders, inability to create awareness for the project, lack of feedback mechanism to participating agencies and language of the repository. Suggested ways to beef up African participation includes: identification of relevant agencies in the different countries, creating awareness for participation among agencies identified, having a feedback mechanism for contributing institutions and finding a way of accommodating actively the French speaking countries in Africa. The paper further evaluated problems in retrieving information on specific subjects and geographic areas. Result from the evaluation shows that subject categorization has been used to describe the documents uploaded. This has led to false drops in most searches. That is precision is never achieved while searching the repository. The subject allocation in the metal data does not help someone who wants information on specific subject area. The descriptors are not the true description of the document. Retrieving information on geographic areas are not precise. The paper recommended that bearing in mind that the Aquatic Commons repository is a growing collection; the number will continue to be on the increase. Therefore for ease of retrieving information from the system a thesaurus must be used for describing the articles uploaded to the system. In the absence of this it will be difficult to bring out the useful information which abounds in the repository. The most tested thesaurus for recommendation is the Aquatic Sciences and Fisheries Thesaurus.

Keita, Arame Ndiaye. Information Manager, Head of Information and Documentation Unit, Direction des Peches Maritimes, Dakar, Senegal; Marc Goovaerts, Director, Library, University of Hasselt, Belgium.

AFRILIB, online union catalogue Of ODINAFRICA libraries: past, present and near future.

AFRILIB, the union catalog of library partners of ODINAFRICA (Ocean Data and information Network for AFRICA), was built during phase II of the project (2001-2004). The main objective was to assist the marine information centers and libraries within Africa in making available online their local resources. AFRILIB was developed when Internet connections were very slow or limited in most participating countries. Currently, AFRILIB is upgraded to include interlibrary loan and resources sharing between partners, and to facilitate information access from Africa to a wide community of users. It contains more than 15,000 records such as journals, monographs, and grey literature, making the database an important information source in marine sciences and coastal ecosystems in Africa. The central database is hosted in IODE. The ODINAFRICA libraries have moved to the new integrated library management system (ILMS) ABCD and repository systems AGRIOCEAN-DSPACE. The new version of AFRILB will be developed upon DSPACE technology and will use its harvesting functionalities to update automatically the database with new records from local libraries. The interoperability with other systems will be the key principle of this new approach to improve access and use of marine information for research and management.

Kilemba, Lucas M. Librarian, Mombasa Polytechnic University College, Kenya.

Our Safari in Migrating From UDC To LC.

This paper will share our experiences migrating from UDC (Universal Decimal Classification) to LC (Library of Congress) in our Library. At times it was very stressful and occasionally hilarious. Some background information is given to explain the necessity of the decision and the highs and lows during

the process. We hope that in sharing our experiences we can learn and get feedback from participants in this Conference. Included is a pictorial record of some activities and challenges. As we move from our hitherto traditional library to a modern digital library, we hope to get useful input on the way forward from our colleagues.

Kovatcheva, Pavlinka. Sciences Librarian, University of Johannesburg, South Africa.
The technologically challenged academic librarian: What has changed in the provision of information services in the age of social interactions?
Since late 2007 my professional life has changed from that of a traditional librarian to a 2.0 librarian. From the implementation of social tools such as Facebook, Twitter, blogs, wikis, social bookmarking to becoming a web designer and content creator for subject portals. So the question is: What librarian am I now? Am I a hybrid librarian? Did I have the required skills to handle all the new online interactions? Three to four years down the road, I'm looking back at my experiment to provide "one click" access to services and resources for the Natural Sciences users. I have found that skills are learned, change is possible, social tools can be very helpful and we, the librarians, are still current and competitive. Oh, and we can work 24/7 if we need to. Will the implementation of mobile technologies in the libraries be a value added option? The paper covers the new roles the librarians are taking in assisting researchers and learners in locating and accessing relevant information. The South African academic library environment is challenging both the traditional and online roles of the librarians. Do we meet the users' expectations?

Kulagina, Liudmila. Head of Science & Technical Library, Russian Federal Research Institute of Fishery and Oceanography (VNIRO), Moscow, Russia.
Creation and development of the electronic library for the Fishery Institutes of Russia.
The beginning of the new millennium was characterized by the rapid development of information technologies in science and education. Use of traditional library funds for the dissemination of scientific information and research was insufficient. The Internet offers great opportunities, but simple searches cannot always give good results. Thus there was a need for the creation of thematic information collections and information resources in the fields of fisheries and oceanography. In 2007 ODINECET project was started. Specialized electronic libraries or repositories for marine libraries began to be created. The Project Office for IODE/ IOC/UNESCO organized courses on the creation of electronic libraries and repositories. The programming tool DSpace was accepted as the software. In 2007 the international repository CEEMAR was created by 5 ECET countries. Since 2007 IBSS-repository (Ukraine) has been started to be created. In 2008 the repository of the Russian Fishery Institutes was created in VNIRO by the support of the Fishery Agency of Russian Federation. The Manakin version was taken as interface form for this database. Now it has more than 2340 full-text documents from 7 Russian libraries. Further expansion and updating of the database are planned.

López Franco, Yolanda Irene. Librarian, Universidad de Panamá, Panamá.
Marine Library Information Integration: Public and Private Institutions.
The Constitution of the Republic of Panama provides that the State will regulate, supervise and implement promptly the measures necessary to ensure the use, development, preservation, renovation and permanence of wildlife, river and marine, forest, land and water resources. The Panama Canal Authority (ACP) conducted a study on Marine Current Measurements in the Bay of Panama, and reported 259 mammal, 957 bird, 229 reptile, and 179 amphibian species as well as many fish. Since information systems are integral to the growth and development of organizations, it is important that all institutions involved in this sort of work adapt to changing information technologies. Management and staff must work together to understand the desired objectives, exchange ideas to improve the management of information, generate recommendations for new policies, and implement new strategies. It is also essential to coordinate the community of librarians and professionals from public and private institutions in marine information through meetings, interviews and other activities to carry out efficient and effective management integration. This paper describes the initiatives, visits, interviews and surveys developed to analyze and ensure this coordination.

Information Safari: Discovering and Sharing Resources

Mwale, Luke. Lecturer, Head of Department of Library and Information Science, Mzuzu University, Malawi.

Information sharing in Africa: Reconciling copyright protection and access to information in grey literature.

Information sharing is vital for both authors and patrons. Some of the notable advantages for authors are the social recognition and economic benefits that are crucial components of copyright protection. Unfortunately, copyright laws are often regarded as major hindrances by users. Furthermore, many authors, especially authors of grey literature, hesitate to share for fear that their information will be misused or stolen. Many people in Africa today have the misconception that copyright protection is synonymous with published works, and that unpublished works are not be protected by copyright. But copyright is meant to protect authors from unfair use of their literary and artistic works whether published or not, as long as they are expressed in written or recorded form. Sharing of grey literature is beneficial not only to the author but to nations as whole. Therefore African governments should educate their citizens about the importance of seeking copyright protection and enforcing laws to protect authors' works from unscrupulous or malicious users. Promoting coyright protection will enhance the availability and sharing of information in an informed society.

Ohimain, Violet Aliwere. Librarian, Nigerian Institute for Oceanography and Marine Research, Lagos, Nigeria.

Managing digital information resources: A quest for African strategy.

African emancipation from information deficiencies will require a continental strategy as the revolutionary trend of information in the global information ecology has created greater challenges for the continent of Africa. The discovery and proper management of information with efficient preservation will greatly enhance the mobility, accessibility and applicability of timely and relevant information, and will also help to bridge the information divide in the continent. This paper critically examines the fundamental issues facing the continent of Africa for effective and efficient management of digital information. Apart from the obvious challenges of infrastructural deficiencies, there are other inherent issues that have caused the continental information leanness. These include the information seeking behavior of Africans, especially the scientists and researchers who are generators of data and information, and the need for ways to manage and add value to information. The paper therefore makes suggestions for strategies to confront the challenges, and strongly recommends that African countries elevate information and communication technology (ICT) management to the status of national and continental policy in order for the continent to benefit from the digital information revolution.

Salanje, Geoffrey. College Librarian, Bunda College of Agriculture, University of Malawi, Lilongwe, Malawi.

Collection of Malawi's scientific grey literature for local and international use.

Bunda College of Agriculture Library has jointly with CAB International (CABI) based in United Kingdom been working on an analysis of conservation management and the dissemination of institutional knowledge in Malawi since 2008. The work involves visiting agricultural sector institutions and libraries, collecting agricultural research information in Malawi and sending it to CABI for scanning and archiving before the information is made accessible online. The project has assisted in exposing Malawi's scientific research information to a wider audience. The paper discusses the project's challenges and benefits.

Scott, Lucy. GEF Agulhas and Somali Current Large Marine Ecosystems (ASCLME) Project. Grahamstown, South Africa.

Marine and coastal electronic information management in ten countries in support of the UNDP GEF Agulhas and Somali Current Large Marine Ecosystems (ASCLME) Project.

Substantial amounts of data and information collected by government and donor-funded marine scientists around the world are not routinely organized or archived in data and information centers. The GEF UNDP Agulhas and Somali Current Large Marine Ecosystems (ASCLME) Project is facilitating the development of national Marine Ecosystem Diagnostic Analyses (MEDAs), a Transboundary Diagnostic

Analysis (TDA), and a Strategic Action Programme (SAP) for nine countries of the Western Indian Ocean region - Comoros, Kenya, Mauritius, Madagascar, Mozambique, South Africa, Seychelles, Somalia and Tanzania. The bulk of the literature addressing ecosystem management in these countries has been reviewed by teams of national specialists and coordinators in the first process of information review. The ASCLME Project has developed a detailed Data and Information Management Plan to ensure that all data collected during the Project duration, including those from expeditions and cruises, are not only tracked and monitored to the stage of publication, but also archived in data centers. The Project aims to support the goal of sustainable national data and information archives that countries can use in the support of Large Marine Ecosystem (LME) monitoring and management in the long term.

Thull, James. Associate Professor, Special Collections & Reference Librarian, Montana State University, Bozeman, Montana, United States of America.

Making Every Penny Count: Building a World-class Trout and Salmonid Collection On a Small Budget.

This paper will describe the collection development methods, strategies and tools used to develop a 10,000+ item trout and salmonid collection at the Montana State University-Bozeman Library (MSU). The Trout and Salmonid subject collection at MSU was created to satisfy the information needs of faculty, staff, students and non-university affiliated researchers. The overall goal is to build the world's most dynamic collection of books, grey literature, and manuscripts devoted to trout and salmon. The scope of the collection is broad and includes material on biology, ecology, angling, politics, economics, culinary arts, spiritual, literary and philosophical works. We actively collect a wide array of materials including books, periodicals, government publications, scientific reports, diaries, theses and dissertations, DVD's and audio materials. The paper addresses several methods used to build the collection using Internet based retailers and the benefits, trials, and problems involved. The importance of courting donors and soliciting donations will be examined, both in terms of value for the collection and the potential for building relationships with benefactors. There is also an overview on how to find relevant material published by small and local presses; print copies of dissertations and theses; and government documents, as well as the benefits of collecting periodicals and collecting the manuscript collections of researchers. The paper also discusses strategies for getting the best value for collection development funds and several of the tools used to locate materials and determine their informational value, such as works cited lists, bibliographies, specialty book dealer catalogs and utilizing the knowledge of experts in various disciplines.

Webster, Janet. Head Librarian, Guin Library, Hatfield Marine Science Center, Oregon State University, Oregon, United States; and Jean Collins, Italy.

Smart Fishing: Using Open Access Resources.

Fisheries librarians and researchers should be taking advantage of the growing body of openly accessible and low cost information. Are they, and why or why not? We will look at trends in usage of information in the past five years to see if African researchers are using more recent information and producing more accessible information in return. The trends will be analyzed to see if they reflect greater awareness and use of open access tools (e.g. Avano) and international initiatives (e.g. AGORA). We anticipate a discussion of the role that IAMSLIC and its members can play in making sure we are taking advantage of the wealth of information in meaningful ways.

Information Safari: Discovering and Sharing Resources

POSTER ABSTRACTS

Regolini, Amanda, Information professional, Bibliometrics Manager, Cemagref, France; and Emilie Gentilini, Cemagref, France.

Analysing co-authored articles.

Collaboration in scientific research now lies above 50% of all research activities in many research organizations (Wuchty et al., 2007). Multi-field research themes force a strong collaboration with partners at national and international level. Our institution collaborates with other research organizations, universities, companies and local authorities on environmental topics. New indicators concerning co-publication data are needed in order to assess the new strategic objectives as concerns the number of research partners. New methods and tools to automate the counting of co-publications have had to be developed. This poster aims to present the bibliometric methods followed and some results obtained.

Regolini, Amanda, Information professional, Bibliometrics Manager, Cemagref, France; and Aurélie Gandour, Cemagref, France.

Search Engine Optimization: Tips for librarians.

Search Engine Optimization (SEO) is a set of techniques used by websites in order to be better indexed by search engines. The final goal is for the site to be better ranked by one or several targeted search engines and therefore appearing higher in their results lists for specified requests.
This poster describes the steps one must take to reach such a goal, while focusing on the example of a particular website. The monitoring of some parameters (Google positioning of the site for selected keywords, keywords used by visitors and site's traffic) allowed us to make some observations of how to improve the site's optimization. The first effects of the SEO campaign were visible barely a week after the end of the site's optimization, achieving better rankings on pertinent keywords and bringing in more visitors.

Information Safari: Discovering and Sharing Resources
Attendee List

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ZAMPIER, Heather. Guest, Maryland, USE

IAMSLIC Business Meeting

Procedures

Basic Parliamentary Procedures

1. Parliamentary procedure exists to facilitate the transaction of business and to promote cooperation and harmony.
2. All members have equal rights, privileges, and obligations.
   The majority has the right to decide.
   The minority has rights which must be protected.
3. A quorum must be present for the group to act.
4. Full and free discussion of every motion considered is a basic right.
5. Only one question at a time can be considered at any given time.
6. Members have the right to know at all times what the immediately pending question is, and to have it restated before a vote is taken.
7. No member can speak until recognized by the chair.
8. No one can speak a second time on the same question as long as another wants to speak a first time.
9. The chair should be strictly impartial.

Motions or Resolutions:

Handling a motion:

1. A member makes a motion. *(Lengthy motions or resolutions should be written out and given to the President before the business meeting. Motions presented at the 1st business meeting are normally not voted on until the 2nd business meeting)*
2. Another member seconds the motion.
3. The chair states the question on the motion.

Considering a motion:

1. The members debate the motion.
2. A member who has been given the floor by the chair may introduce an amendment to tthe main motion. If seconded, the amendment becomes the question under consideration until it is put to vote and resolved, after which debate returns to the original, main motion
3. The chair restates the motion and puts the question to a vote:
   - "All in Favour of the motion please say aye."
   - "Those opposed, please say nay."
4. The chair announces the result of a vote (adopted or lost)

Other Parliamentary Processes:

1. A motion may be delayed by referring to committee for addition work or tabled to allow for another action to happen before the motion is discussed further
2. A vote to amend, refer to committee or table would happened before returning to vote on the initial motion.
3. The Parliamentarian will advise the President on other processes and procedures

Adapted from: parliamentary Procedure toward the Good Order of the University by Dr. John A. Cagle
http://www.csufresno.edu/comm/cagle-p3.htm

Information Safari: Discovering and Sharing Resources

DRAFT AGENDA

1ST GENERAL MEMBERSHIP MEETING

MONDAY, OCTOBER 17th 2011

37th IAMSLIC Conference

Information Safari: Discovering and Sharing Resources

October 16th-21st, 2011, Zanzibar, Tanzania

1. Call to order
2. Introduction of parliamentarian
3. Approval of the agenda
4. Minutes of previous Annual Meeting
   A. Approval
   B. Matters arising
5. Annual report from the President
6. Annual report from the Treasurer
   A. Approval of financial statement for the past year
   B. Approval of the budget for the next financial year ??
7. Annual reports
   A. Aquatic Commons Board – Joan Parker
   B. Membership Committee – Jean Collins
   C. Nominating Committee – Barb Butler
   D. Resource Sharing Committee – Jose Garnica
   E. Website & Communications Committee – Steve Watkins
   F. Strategic Planning – Elizabeth Connor
   G. Site Selection Committee – Daria
8. Annual highlights from the regional representatives (available on website)
   A. CYAMUS – Brian Voss
   B. AFRIAMSLIC – Edna Nyika
   C. EURASLIC - Snejina Bacheva
   D. Latin America - Teresa Barriga Ramirez
   E. Pacific Islands - Suzie Davies
   F. SAIL - Carla Robinson
9. Business from the executive
   A. Proceedings of Conference – electronic or paper
   B. IAMSLIC resource sharing / membership
   C. Grants for conference travel
   D. MoU with UNESCO
   E. MoU with FAO
10. Other Business
11. Adjournment

Information Safari: Discovering and Sharing Resources

DRAFT AGENDA

2nd GENERAL MEMBERSHIP MEETING
THURSDAY, OCTOBER 20th 2011
37th IAMSLIC Conference
Information Safari: Discovering and Sharing Resources
October 16th-21st, 2011, Zanzibar, Tanzania

1. Call to order
2. Approval of the agenda
3. Business from the executive
4. Other New Business
5. Installation of Officers
6. Acknowledgement of 2011 Officers
7. Invitation to Anchorage, Alaska in 2012
8. Adjournment

Information Safari: Discovering and Sharing Resources

IAMSLIC Treasurer's Report Final Report

October 1, 2010 – September 30, 2011

Beginning Balance		**$29,343.37**
INCOME		
Membership		
Dues	$14,062.67	
Guin	$ 470.00	
Guin auction (2010 Argentina)	$ 771.73	
Proceedings	$ 20.00	
TOTAL INCOME		**$15,324.40**
EXPENSES		
2010 Conference proceedings (Argentina)	$ 1,078.80	
Regional Groups		
AFRIAMSLIC (2011)	$ 490.00	
Cyamus	$ 1,428.00	
Euraslic (partial 2011 + holdover)	$ 3,525.49	
Latin American Group	$1,900.00	
Pacific Islands Regional Group (2008,2009,2010,2011 holdover)		
SAIL (2010-2011 partial)	$ 1,900.00	
2011 Guin Fund Travel Grants		
Lucas Kilemba	$ 500.00	
Moses Ibeun	$ 500.00	
Zanele Constane Hadebe	$ 500.00	
Luke Mwale	$ 250.00	
Apollo Anungu	$ 250.00	
2011 conference officer support		
Dorothy Barr	$ 300.00	
Amy Butros	$ 1,925.00	
Marcia Croy-Vanwely	$ 1,925.00	
Web hosting (DreamHost Web Hosting)	$ 180.00	
Bank fees (incoming and outgoing wire transfer fees)	$ 471.50	
Admin (annual filing fees, postage)	$ 79.60	
Internet Domain registration (3 years)	$ 110.90	
TOTAL EXPENSES		**$15,426.29**
ENDING BALANCE		**$29,241.48**

Respectfully submitted,
Sandra Abbott-Stout
Treasurer, 2010-2012

Information Safari: Discovering and Sharing Resources

36th IAMSLIC Conference 2010 First Business Meeting

DRAFT Minutes

36th Annual IAMSLIC Conference October 17-26, 2010 Mar del Plata, Argentina
Netting Knowledge: Two Hemispheres-One World
Minutes of First Business Meeting, Monday, October 18, 2010

The meeting was called to order by President Ruth Gustafson.

President's Remarks

2010 was a year of great transition. Pauline Simpson used letters from our name, IAMSLIC, for her introductory remarks, and I will be using our regional groups. "A" (AFRIAMSLIC) is in anticipation of our meeting in Africa. "C" (CYAMUS) for cooperation; Steve put up the new website, and the transition was seamless. "E" (EURASLIC) for the Energy of our volunteers, we are a totally volunteer organization with an amazing amount of energy exhibited, especially in projects like Aquatic Commons. "L" (Latin American Group) is for Learning; we learn so much at conferences and as President I've learned a lot. Another transition we will be discussing will be the Aquatic Commons transitioning from Florida to IODE. The MOU will have to be rewritten to include this new issue. "P" (Pacific Islands) is for Persistence. We have a lot of members not aligned with a regional group, lots of them from Asian countries, and we hope to have that area continue to grow and become a new regional group. Lastly, "S" (SAIL) for Seamless integration of all our tools, like the website and Z catalog, helping people to find resources.

Approval of Minutes of 2009 Business Meeting

The 2009 Business Meeting Minutes are on the website, listed under meeting minutes; Ruth apologized for not having paper copies to distribute. Annual reports are on our website, under member access. Review and approval of the 2009 Business meeting minutes was postponed until the second business meeting so more people will have a chance to read them.

Treasurer's Report

Steve Watkins presented the Treasurer's Report for Sandra Abbott-Stout. Income was from membership dues, Brugge meeting Guin Auction, and proceedings. The total income reported was $19,799.92. The expenses included the conference proceedings, printing and mailing, allocations sent to regional groups, with amounts depending on their membership numbers, and costs for web hosting.

The Guin funds travel grants were awarded to: Lil Bidart, Clara Ramirez, and Aida Sogaray. The IAMSLIC bylaws allow for travel support, and some officers received various amounts of support. There was an expense of $374 in bank fees for wire transfers. The total expenses were $18,426.89.

Joe Wible asked for a printed copy of the Treasurer's report to be posted on the bulletin board at the entrance to our meeting room. Jan Heckman moved for acceptance of the Treasurer's report and Lenora Oftedahl seconded the motion. Discussion followed, members wanted to see the report before voting on it, so Jan withdrew his motion, and withdrawal was approved by Lenora**.** Treasurer's report approval will be postponed until the next business meeting.

Committee Report Highlights

Information Safari: Discovering and Sharing Resources

Website and Communications Committee Report

Steve Watkins reported that the Committee had a busy year. They formed a task force to identify the options for hosting IAMSLIC web services. We had been fortunate in previous years to have Woods Hole host our server, which is now getting old and beginning to fail, so the Task Force recommended to the Executive Board that the hardware not be replaced, and that instead we move to a service that will take care of hardware. In June 2010, we migrated all website content to the new server, with service from DreamHost.com. The new environment is easier to administer and the regional groups and committees will be able to easily have their own sections. Since IAMSLIC is registered as non-profit, DreamHost waved the initial fee and the expenses for website went from $1,200 to $180 per year. During the coming year the discussion list will be moved to the new service. The Cyamus regional site has moved to the new service, other regional groups are welcome and invited to establish their sites there free of charge. Membership database and Union List wil be on the new service. This year, each of the committees was asked to identify issues that need to be discussed and will be added to a new process that Ruth will be covering soon.

Janet Webster asked if we need to contact Steve if a committee needs a page on the IAMSLIC website. Steve responded that it would be best to email him your request.

The Committee members are: Steve Watkins, chair, Amy Butros, as junior president-elect, Kathy Heil, as secretary, Dan Bellich, the liaison to Woods Hole Repository, Dorothy Barr, Lenora Oftedahl, for the discussion list, Mary Lou, member at large, and Sally Taylor, also member at large. Steve mentioned that they welcome membership from any of the regional groups, the bylaws dictate the membership due to duties of the officers.

Site Selection Committee

Ruth reported for the committee. There were two proposals for our 2012 meeting; the site selected was Anchorage, Alaska. In their recommendations, the Committee suggested that the rotation cycle be changed to help not have so many conferences distant from each other. Each regional group will have the opportunity to have a conference in their area, but if a regional group cannot host at that time then rotation moves on to the next group, but they will get a chance to host later if they want to. Kris Anderson, a member of the committee, reported that their recommendation included investigating any groups that would want to meet with us, to have a joint conference with us, any library organizations within the region. Jean Crampon mentioned reading in the report that the meetings in North America would not be back to back, splitting up the geographic rotations. Janet Webster asked about planning meeting locations in advance to have that information available when selecting officers to run. Kris reported that there were 2 complete proposals for 2012, and they chose Alaska and recommended that the Latin American group, with Irene Beltran, prepares a proposal to host in 2013.

Membership Committee

Janet Webster reported for Jean Collins. This Committee has representatives from the different regional groups and one member at large. Their main issue was member payment methods and bank transfers with international funds. You need to let Kris Metzger know when doing such transfers to pay for membership, since funds come in sometimes with no identifying information attached. We need to increase sponsored memberships. We continued with 2 sponsored members this year, extended memberships, but did not have any new ones. Janet commented that communication to the membership is very important, especially when you have new members, you need to report on what issues are being addressed, and the new issues need to be relayed. We need to figure out the responsibilities of the membership committee. Should they, for example, tell new members about the Z database? Should they send welcome letters, and contact the regional group representative when there is a new member in their region?

Information Safari: Discovering and Sharing Resources

Janet recommended that all new members be added to the IAMSLIC discussion list and then have them "opt out" if they do not want to be on the list. We were very fortunate to have Jean Collins as membership chair after her retirement. We need to have IAMSLIC decide on what is to be done when chairs leave their positions or retire. What happens to their committee position?

Janet reported the membership numbers by region:

AFRIAMSLIC: 40, CYAMUS: 54, EURASLIC: 84, Pacific Islands: 35, SAIL: 69, and Latin America: 46.

ASFA sponsored 19 members this year. Richard Pepe reported that they have a total of 32 members sponsored, since they do sponsorship in 2 year terms. Pepe stated that it is very difficult to explain to partners what membership is, and the benefits of resource sharing, the Z database, and other benefits. The Committee has brochures and letters of welcome in several languages. Gabi Silvoni mentioned that it is very important for the regional group representative to have contact with the new members in their region, to help them understand services, encourage them, and get them started.

Jan Heckman suggests that IAMSLIC send a member to SLA and recruit members during the conference. Janet stated that we had members in the past as liaisons with other organizations, such as the Biology Division of SLA and IFLA, it is good to promote IAMSLIC in other groups.

Question (translated from Spanish) we need help to understand the differences in the types of membership. Janet responded that we do not have institutional memberships anymore. Steve responded that if a library had 4 librarians then it could join IAMSLIC, but only one would be a voting member of IAMSLLIC, the other 3 members cannot be voting members, but can join the discussion list and use the Z, but there will be only one contact person for the institutional membership, and that person will be able to attend meetings at the IAMSLIC rate.

Nominating Committee

Marcel Brannemann reported that though the process of nominating is short, they were still able to find candidates for all positions. This was the first time that they had 3 candidates for the office of President Elect. Voting closes on Wednesday at noon, if you have not voted yet and would like assistance contact Steve Watkins.

Resource Sharing Committee

Ruth contacted 10 people while trying to find a member to chair the committee. Janet Webster had suggested that Jose Garnica would be a good choice for chair, and Ruth announced that he will be the new chair of the committee. Steve Watkins reported for the committee and stated that it had not been a very active year, and the chair, Larry Currie, had resigned when he left his position. The main elements for the Resource Sharing Committee's charge were to facilitate international resource sharing, explore sharing of union lists of serials, facilitate sharing inside the regions, and to find documents to be digitized and deposited in Aquatic Commons and Oceandocs. The Committee basically fulfilled all the elements of the charge, and they will be looking for new direction for this committee. There was a good suggestion this morning about consortial agreements for licensing of electronic publications, mainly journals, for members. Discussion followed on the ongoing role of this committee, would it be good to have a standing committee for this area? The remainder of the report consisted of summaries of all borrowing and lending activities for the year, the numbers were reported via the blog in July.

Jean Crampon suggested that a tutorial for using the Z database may be helpful for members. Steve mentioned that the help information had not been updated, so that would be a good area for the committee to explore.

Regional Group Reports:

Information Safari: Discovering and Sharing Resources

AFRIAMSLIC: Edna Nyika was not able to attend, her report will be posted.

CYAMUS: Sally Taylor, Regional Representative, reported that their main activity this year was having their annual meeting in March 2010, a wet and snowy meeting at the Bamfield Marine Sciences Centre, Vancouver Island, British Columbia. At the meeting they had institutional reports, member presentations, and several discussions. The meeting summary and photos are on the Cyamus website. The field trip was cancelled, so there are some funds left for the year. New Cyamus board was elected: Brian Voss will be the new Cyamus Representative, he works at NOAA in Seattle, WA; Maureen Nolan, from the University of Washington, will be the new Secretary; and Debra Losey, from NOAA South West Fisheries, will be the new Treasurer.

EURASLIC: Marie Pascale Baligand presented and reported that they currently had 84 members. Their bi-annual conference will be in Lyon, France, and Marie's institution will host the meeting from May 17-19. All are invited. They have a newsletter and will have a blog soon on their website when they move their content to new website software. European countries' gave their reports at the meeting. Their website will be on "Vite" the new software they voted for. They do not have any treasury anymore, and thank IAMSLIC for taking care of their funds.

Latin American Group: Maria Clara Ramirez reported that they now have 46 members, and then thanked ASFA, FAO and UNESCO for their sponsorship of members. Latin American regional members participate in many IAMSLIC committees, and they now have 23 institutions in the Z Union List from Latin America, and they hope to have more holdings in the coming years. They have more than 1,355 documents, from several Latin American countries, in the Aquatic Commons. They had the first Latin American Group meeting in Cuba last year, and members from many countries attended. Their second Latin American members' regional meeting this year is right after the IAMSLIC meeting. They had some problems with communication with some countries due to technological problems and they are working on solutions. In order to be more effective with sharing they intend to increase documents in Aquatic Commons and Oceandocs. In their group recommendations they mentioned wanting IAMSLIC to continue its support of the Latin American regional area. They acknowledged Guillermina and Gabi for hosting, and thanked the Cuban librarians for hosting their first regional group meeting. They also thanked UNESCO and IAMSLIC for supporting their group.

PIRG - Pacific Islands: Peter Murgatroyd was not able to attend, his report is posted.

SAIL: Jen Walton reported that they had 69 members this year. They had their meeting in April in Tipton Georgia, with 16 members attending, and some were not IAMSLIC members. They will use their IAMSLIC funds for their next meeting in Galveston to attract members and help the host, and possibly encourage people in that area to join IAMSLIC.

Aquatic Commons Report

Lisa Raymond covered the highlights of the report. The working group continues to increase availability of documents, and African documents continue to be digitized. "Aquatic Commons in a Flash" allows places with low bandwidth to get document on flash drives, 40 of them were distributed to fisheries libraries. Aquatic Commons (AC) came in at 182 in the ranking of repositories, last year it was at 259. Total downloads were 93,498! The term "fish culture" is one of the top ranking search terms. Stephanie included a lot of nice graphs and charts in the annual report, and there is more information on search terms and usage. The state of Florida no longer allows hosting of the repository, so IOC/IODE and Freshwater Biological Association were evaluated as potential hosts, and IOC/IODE was selected as the next AC host. Lisa thanked Stephanie for all her work and efforts.

Janet asked for further explanation about the flash. Lisa responded that she did test it, and that there were directions on how to upload files, reports or articles, and metadata. It has some glitches, but it will be a great help for places that do not have

good internet access. Janet asked about IODE hosting AC, and the response was that AC will stay an E-prints repository; there will be no changes with the new host. Linda Pikula stated that she will be helping with the transition and Stephanie will be an expert consultant during this transition. Linda learned of this the second week in July, and the transfer was just made 2 weeks ago. The IT people are in communication about passwords and different file types, and working well together.

OLD BUSINESS

MOU with IOC

Ruth reported that we will need to rewrite the MOU to cover the hosting of Aquatic Commons on the IODE site. The Executive Board members are working on the Annex part of the MOU, and will have several people review it. IODE is doing the hosting at no cost, if there are a lot of changes and upgrades required, there may be some cost, at a later date. Hosting our Aquatic Commons is a cooperative venture with IODE.

A copy of the MOU is on the website, but the Annex section is not up because it was not ratified in 2009 due to our not having a quorum at the Bruges IAMSLIC meeting. The Annex will be re-written and sent out for vote, since we do not have a quorum at our annual meeting this year also.

NEW BUSINESS

Convening of 2nd Council of Singers

Ruth gave a brief background of the Iceland IAMSLIC meeting, and mentioned that the ruling body in Iceland was called the "Council of Singers" and that the following year, the President, Stephanie Haas, wanted to convene a "council of singers" to work on IAMSLIC issues. Steve posted that year's annual report to our website so we can see the Council of Singers' work; the report is listed under our 2010 Annual Reports. Ruth collected issues and concerns from IAMSLIC committee reports to give as charges to the new Council of Singers. Ruth suggested that we have regional representation on this new council, so the membership will be larger than the original 5, with Steve as one of the members, and regional group representatives nominating members in their area, plus a new IAMSLIC member.

Janet Webster asked if there was a charge for the new council. Ruth stated that she will take items from the annual reports, find the patterns and develop the charge from there. Any members wanting to serve on this Council of Singers should talk to Ruth or the incoming President and President-Elect.

An action item for the Resource Sharing Committee was addressed, a new item about investigating possible consortia agreements. Idea was proposed that the new President, Marcia, work with the new Chair of the Committee, Jose Garnica, on this issue.

Jan commented that this consortia plan for resource sharing should be done with the regional groups being at the forefront and IAMSLIC in the background, since the money will mostly come from the regional groups, and that there were several other variables that need to be discussed in this committee. Janet stated that there is a lot to be considered, not just making a consortia deal, but also looking at the models out there, e.g. in Argentina, Brazil, etc. The main part would be trying to add value to being a member of IAMSLIC. We are still looking at resources and ideas, and the Resource Sharing Committee can look at how we can make that work.

Janet announced that there will be a Membership Committee meeting on Wednesday in the Trattoria bar, anyone can attend.

Kris Anderson asked about the timeframe for the Council of Singers charge. Ruth plans on having a draft for this Thursday's business meeting.

Margaret Crampton asked about when the membership dues were due. Ruth responded that technically it was January, but she had heard from Pacific Islands' members that their institutions distribute funds in July. Steve stated that Kris Metzger will be sending out the call for renewals in the next few weeks, and since the dues go back to the regional groups and the amounts are based on number of members, so, to be distributed to the regions, the dues must be in by the end of January. Ruth commented that it was a point of concern for many that they can't get their dues paid until June or July due to their institutions practices. Sonja Kromann suggested that it may help if they paid for several years in advance, but the problem was that many institutions do not pay for multiple years.

Ruth gets membership data from Kris every month, and she stated that every region had a jump in summer, so the allocations calculated in January are lower than the actual membership, which is why it would be better if we calculate regional dues later. Question was raised about changing the membership dues deadline to July, and Joan Parker stated that the trigger to access the Z database is different than the actual census of regions that is determined by dues received. Ruth reminded all that a report on this new structure was due 3 years after implementation, so this is another issue that should be added to the Council of Singers list of issues.

The meeting was adjourned at 4:50 pm

Respectfully submitted, Amy Butros, Acting IAMSLIC Secretary.

Information Safari: Discovering and Sharing Resources

36th IAMSLIC Conference 2010 Second Business Meeting

DRAFT Minutes

36th Annual IAMSLIC Conference October 17-26, 2010 Mar del Plata, Argentina
Netting Knowledge: Two Hemispheres-One World
Minutes of Second Business Meeting, Thursday, October 21, 2010

The meeting was called to order by President Ruth Gustafson.

Ruth thanked Amy Butros for doing the minutes for the Exec meetings and the Business meetings, and thanked all INIDEP Library staff for their great assistance.

Announcements

Ruth announced that the UC Davis email system is being changed, and that she has been the manager of our discussion list for 7 years, followed by Lenora. Ruth reported that the new UC Davis system will not be as flexible, so our list will be moving to DreamHost, which has more capabilities. All members will be transferred over to the new system. They will be sent an email about the new discussion list, and will need to accept it to be added to the list. Steve reported that the email announcement will be sent to all IAMSLIC members, not only those currently on the list. Ruth reported that Exec is nearly finished with the revised MOU and new appendices. Ruth will then discuss the MOU with Linda Pikula, our representative to IODE/IOC, and then the MOU will be passed on to IODE.

Agenda approval and call for additional items

There were no additions to the agenda.

Review and Approval of Minutes from the 2009 IAMSLIC Business Meetings

Ruth called for approval of minutes that had been posted on the bulletin board for the last few days. Steve Watkins made motion for approval, and Jean Crampon seconded the motion. Ruth called for a vote on motion to approve the minutes; all were in favor and motion carried.

Jan Heckman moved that minutes from the second business meeting be approved; motion was seconded by Joan Parker. Janet asked about the minutes ending at New Business when there was no record of any new business at that meeting. Ruth asked for a vote on motion to approve the minutes, there was one 'nay' vote (Snowdy). Motion carried and the minutes were approved.

Approval of 2009/2010 Treasurer's Report

Steve presented the Treasurer's Report at the first business meeting on Monday, approval was delayed to allow time for members to read the report, and the report was posted on the bulletin board.

Lenora moved for Treasurer's report to be approved, Janet seconded the motion. Jan reported that the Sail numbers were partial amounts and that the group's representative would know the full amounts. Joan asked about the Brugge conference and if there was information on conference income and expense since it was not in the report. Ruth mentioned that there was

a note of transfer of $2000 due to having a loss from the Brugge conference in that amount. Jean asked if the loss was $1500 or $2000, since the amount usually given to a conference is $3500. Steve asked for correction of spelling in officer's name (Marcia's). Joan reported that since 1990 they have been compiling a spread sheet with conferences' attendance and expenses, which is available in the conference planner's section of the website. Steve clarified that Joan's request was for this information on conferences to be added to the Treasurer's report. Joan asked for procedure on the format of Treasurer's report, since the addendum with ending balances should be above the Treasurer's report. Ruth called for a vote on the motion to accept the report, motion is carried, and the report is accepted.

Membership Presentations

The Membership Committee submitted a request to the Executive Board for Stephanie Haas to be awarded lifetime membership in IAMSLIC.

Janet Watson conferred the Lifetime Membership Award in recognition of Stephanie's many accomplishments and contributions. Janet recalled the great talks that Stephanie gave at meetings and her great presentation titles, and how Stephanie always reminded us that fresh water was as important as salt water. Stephanie was instrumental in getting the Aquatic Commons going, instrumental in supporting it, and will continue to help us with it.

Lisa Raymond accepted the award on Stephanie's behalf. Lisa stated that Stephanie was a mentor and friend to many, and that she was honored to accept the award on Stephanie's behalf.

Guin Travel Grant Recipients

Ruth announced that the Guin Travel Grant Award recipients this year were: Lil Bidart, Aida Sogaray, and Clara Ramirez.

Marcia announced that one of our favorite people will be retiring in January, Richard Pepe. She thanked Richard for his support of IAMSLIC and of all members, professionally and personally. She commented that she will miss him, and so will all the women. She concluded by remarking on her hope to see Richard in Zanzibar and many other meetings in the future and for him to continue to give presentations and remain active in IAMSLIC.

Ruth stated that there was a member present who had attended 30 consecutive IAMSLIC conferences! She congratulated Joe Wible on his 30th year of IAMSLIC conference attendance.

Second Council of Singers Charges

(Note: the four charges below were posted on the IAMSLIC Blog on 10/20/2010, and included in the Second Business meeting Agenda for 10/21/2010).

Charge One: Investigate improving the Annual Conference and investigate enabling more participants to attend.
Charge Two: Explore expanding IAMSLIC membership.
Charge Three: Investigate methods to improve communication across IAMSLIC and the regional groups.
Charge Four: Explore ways to improve the structure of the Executive Board and Committees to broaden participation by members throughout all regional groups.

Ruth reported that the Executive Board had drafted the charges for the 2nd Council of Singers at their meeting last night. The charges were posted to the blog and distributed to membership at this business meeting. She then opened the floor to questions. Jan Heckman asked about charge four, he needed clarification on what it referred to. Barbara Butler stated it was required to have representation from regional groups so this seemed redundant. Ruth mentioned that there was no

representation on the Resource Sharing Committee, and that this charge is also for exploring the structure, such as having a conference planner that is not an officer. Barbara commented that membership of the Exec is codified by the bylaws and any change will be a bylaws change. Ruth agreed that changes will necessitate a change of the bylaws, and added that this was drafted to explore possibilities to allow more members to partipate. Barbara then asked about charge one, and mentioned that Exec had voted to have a committee to plan the conference and do fund raising. Ruth responded that the committee was appointed by Marcia, and Marcia reported that she appointed several groups and committees that worked on different areas of the conference. Marcia commented that a few items had not been updated in the procedures, and that she used procedures that worked best for her. Joan Parker clarified that this was supposed to be a standing committee to maintain the traditions and history of fund raising and make it easier for continuity for the conferences.

Joan wanted to stress that we need to look at the history of our organization and communication of previous work, before undertaking new charges. Janet Webster reported that in the first Council of Singers the IAMSLIC group was smaller, more North American centered, and it was at the point where it was ready to grow and make a big change. Out of that Council came the Z database, and invitations for more people to join IAMSLIC. What is missing from the charge is what the regional groups want, the variety of needs and desires of the regional groups, what would they like to see us explore; such as training opportunities, administrative issues (money exchange). These are all missing in the charge. General expectation in strategic planning is to review what has been done previously and how to build on those strengths and move forward.
Ruth asked Janet if there was anywhere in these charges to address the regional groups and their needs. Could there be an added charge or a preamble that would be an introduction to the charge. Steve Watkins agreed with Janet's comments and added that a process to solicit input from each regional group and address issues and strategies that would improve their ability to participate in meetings should be part of the charge. Joan added that on a more practical level she would expect more to be on charge two, since this is already a charge for the membership committee. Richard Pepe mentioned that our epix is resource sharing, and that committee has not been that active, and that there is still a lack of understanding of the functions of repositories, digital archives, etc. and we need a place to have the action item for cooperation/sharing of resources. Ruth responded that this was on the list, to create a new charge for the Resource Sharing Committee. Steve asked for a description of the membership of the Council of Singers. Ruth responded that it should be 10-12 members with representatives from the regions appointed by the Regional Representatives, with 2 past presidents for institutional memory, and 2 new IAMSLIC members. Steve expressed concern about having 12 people work together to come up with proposals and plans, and suggested that a smaller group, or several task groups for specific topics, may work better. Ruth agreed that people with expertise in certain areas can be pulled in to help work on specific issues, and form smaller groups. Kris Anderson commented that most people did not know what the First Council of Singers was, and that the name was appropriate at the time because it came out of the Iceland meeting, but at this time it may be better to refer to our new group as a strategic planning group for IAMSLIC, and that 12 people may be too many to be effective.

After discussion, there was general agreement that the group should be a strategic planning group, not a "Council of Singers". Ruth then stated that she will be posting to the blog that the name will be changed from Council of Singers to strategic planning, and if anyone present were interested in working on drafting revised charges they should contact Ruth and Marcia. Marcia stated that the charges will be revised to reflect what the membership needs.

Barbara Butler commented on the issue of communication and that she remembered how much work it was to be on the Executive Board, but the membership never hears what is going on. Since members have not heard from Exec the whole year, the comments today are due to membership not having heard from Exec any background or details on the issues. Ruth commented that a communication venue was lost, the IAMSLIC newsletter, and that she hoped that it may come back, and would be something that may need to be reinstated. She added that much work is done by the committees, and that they are the strength of the association. Steve responded that a few years ago the membership chose to stop the newsletter, since it

was a lot of work to produce, and the association chose the blog as the vehicle of communication and it should be used by the Exec for any communication.

Thanks to IAMSLIC Volunteers

Ruth thanked all IAMSLIC volunteers and asked for all officers to stand, and mentioned that Sandra Abbott-Stout, the Treasurer, attended Exec meetings via Skype. Ruth also asked the Executive Board, the Regional Representatives, the Committee Chairs, Proceedings Editor, and all committee members to stand, which was almost the whole room of attendees.

Election Results

Ruth reported that the candidates for President-Elect were Marian Jiagge, Maria Kalenchits, and Lenora Oftedahl. She commented that just agreeing to run for office is a big commitment, and thanked all candidates. She then announced that the next Junior President-Elect will be Maria Kalenchits, and the Treasurer will be Sandra Abbott-Stout.

Janet Webster, speaking for the membership committee, asked anyone who wanted to pay for IAMSLIC membership at this meeting to give her their dues, for 1, 2, or 3 years of membership. Janet also acknowledged that they needed to provide more information for new members, and they will be adding an orientation packet with information on the Z database.

Lenora reported that the Guin auction raised around $800 USD, with highest item purchased being the original photos by Marcel, and most unusual item being the octopus mask.

Marcia reported on the thinking behind the conference theme of two hemispheres and one world, and commented that for the first time we had someone from the northern hemisphere cooperating and working with someone from the southern hemisphere and presenting a paper together, Gladys Fernandez from INIDEP and Bohan Macan from Ruder Boskovic Institute in Croatia. We need to strive to have more of these types of cooperation. Marcia reminded people to send their papers to the proceeding editor, and then thanked Guillermina and Gabi for being incredible hosts and for all their efforts for our great meeting.

Guillermina stated that it was a great team and that Marcia was fun to work with and made everything run smoothly.

Ruth officially turned the meeting and presidency over to Marcia. Marcia thanked Ruth for her year as president, and wished her the best as Past President. Marcia acknowledged how difficult the Brugges meeting was to plan and thanked Ruth for all her work.

Marcia thanked Gabi for all her work in organizing events, and also Gladys and Nancy, and stated that is was a pleasure to meet in Mar del Plata, mainly due to all their hard work. Gabi thanked everyone and reported on how much she learned from her internships in the US, and she that has recounted the importance of internships and membership in IAMSLIC to her Latin American colleagues.

Joe thanked Marcia for planning an excellent conference, and Marcia thanked Joe for being the financial officer for the conference for this year and for volunteering to do so again for the coming year. Marcia thanked the sponsors again and especially the ones who made an effort to attend the meeting and make presentations.

Meeting was adjourned at 11:40 a.m.

37th IAMSLIC Conference
5th AFRIAMSLIC Conference
October 16th - 21st, 2011 Zanzibar, Tanzania
IAMSLIC
2011
AFRIAMSLIC
UNIVERSITY OF DAR ES SALAAM
CHUO KIKUU CHA DAR ES SALAAM

EDITOR'S Notes

IAMSLIC 2011, Zanzibar, Tanzania

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Zanzibar! For many of us in the West, the name evokes a place so exotic that it hardly seems it can be real. And it is indeed a truly magical place, but its warm, friendly people who made us all feel very welcome. We enjoyed the soft breezes, the view of the magnificent ocean (what a treat to fly over it!), the wonderful food – and most of all, friends and colleagues. It was a special pleasure to meet and get to know so many of our African counterparts! Hopefully we can maintain and nurture some of the relationships established in Zanzibar.

As always, I think we all came away from the conference energized and excited. And now – from tropical paradise to Explore New Frontiers in the hopefully-not-yet-frozen North of the US for **IAMSLIC 2012**!

INTRODUCTION

Amy Butros
Conference Chair & Convener 2011
IAMSLIC President 2011-2012

Welcome, Karibu, Bienvenue, Ahlan wa Sahlan, to the Proceedings of the 37th Annual IAMSLIC Conference and the 5th AFRIAMSLIC Conference which was held in Zanzibar, Tanzania, 16th – 21st of October, 2011. The theme was: "Information Safari: Discovering and Sharing Resources".

We may be separated by geographic distances, many cultures and beliefs, but we were brought together at this conference to share our knowledge and experiences. This was the first IAMSLIC meeting in Africa, a very historic occasion ; it was also the first joint IAMSLIC & AFRIAMSLIC meeting, and our AFRIAMSLIC hosts, and resort & event hosts, were very welcoming, warm, gracious, and pleased to have us meet in this wonderful continent. We all hope that this was the beginning of many more conferences taking place in Africa.

I hope you will enjoy reading the papers from your IAMSLIC colleagues who all come together for an exciting adventure of sharing and learning. We had chosen the theme of "Information Safari: Discovering and Sharing Resources," and our speakers and presenters dazzled, informed and entertained us with presentations ranging from collecting and taming gray literature, marketing marine information, populating and utilizing the Aquatic Commons, to using new technologies to collect, share, and give access to an incredible array of resources.

The five days of meetings, workshops, presentations, and networking time, started with a very informative and enlightening tour of Stone Town and an impressive welcome reception in the charming and exotic Zanzibar Beach Resort. On the first conference day we were treated to an exciting Welcome address by the Honorable Minister Haroun Ali Suleiman, Ministry of Labour, Economic Empowerment and Cooperatives, and with a Keynote speech by the Deputy Vice Chancellor, Administration, University of Dar es Salaam, Professor Yunus Mgaya, which were broadcast on their local television station that evening. The three days of presentations, with tasty and fresh lunches overlooking the beach, and fun breaks to network, bid on Guin Auction items, and talk to our sponsors, were topped off with a luxuriously memorable banquet in the Melia Resort.

We extend our heartfelt appreciation to our sponsors, especially Inter-Research, ProQuest, and the Information Training and Outreach Centre for Africa (ITOCA); and of course our host institution, the University of Dar es Salaam. The charming and caring representatives of these companies and institutions informed and entertained us and helped make this Zanzibar conference a most memorable one.

PRESIDENT"S WELCOME

Marcia Croy-Vanwely
IAMSLIC President 2011
Fisheries & Oceans Canada, Vancouver

I have been fortunate to have been able to travel to Africa twice before. My first trip was to Kenya in 2005, followed in 2009 by a trip to Egypt. This year I have the great honor of welcoming you to our 1st IAMSLIC Conference in Africa.

This is a time to use all your senses while at this conference in Zanzibar.

- **Hear:** Listen to all the presentations. Each presenter has something to say, something to offer you.
- **Touch:** Introduce yourself to the other attendees. Our best networking is done face to face.
- **Sight:** See the posters, visit the sponsors and absorb the views of Zanzibar.
- **Smell:** This is the Spice Island!

And lastly, dream wonderful dreams while you are here.

ARE SOCIAL MEDIA THE NEW TECHNOLOGY FOR BREAKING THE RESOURCE SHARING BARRIERS IN LIBRARIES?

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37th IAMSLIC Conference
Zanzibar, Tanzania, October 16-20, 2011

Abstract: Information has been defined as a resource comparable to energy and other natural resources. Information influences different sectors of our lives, personally, economically, socially, etc. Libraries and other information sectors have played the role of guardian, housing information over time. New and emergent trends in information provision involving the use of modern technology has made marked differences in the ways libraries harness, store and share information under their custody as they struggle to satisfy a clientele that has become geographically scattered and more technologically savvy. This paper reviews innovations that Aga Khan University, IED EA Library is currently putting in place in order to satisfy its divergent user needs and stay relevant in the new techno-information provision setup.

DISCOVERING AND SHARING INFORMATION ON THE USE OF E-RESOURCES TO ENHANCE THE USE OF SCIENTIFIC LITERATURE: CASE STUDY OF THE KENYA MARINE AND FISHERIES RESEARCH INSTITUTE LIBRARY, KENYA

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Abstract: The Kenya Marine and Fisheries Research Institute (KMFRI) Library is guided by our vision "to be a one stop provider of user focused quality library services and develop collections in support of aquatic research and promotion of sustainable utilization of Marine and Freshwater resources." The provision of documents, bibliographic searches and compilation provided by the current awareness product KMFRI CURRENT remains one of the core services we offer to researchers/scientists and relevant institutions. We have moved from the era when documents came courtesy of former RECOSCIX-WIO and later ODINAFRICA, most of which were hard copies and difficult to store. The library is now able to service 70% of the requests through its collection, in the building of which both RECOSCIX-WIO and ODINAFRICA played parts. Besides filling requests from within, we have also been able to service requests from outside, mostly for published papers by local scientists. The library has its own internal databases such as ASFA, KENYAN WATERS and SAMAKI, and also maintains the directories KENDIR, AFRIDIR and GLODIR. Collaboration with IAMSLIC, AFRIAMSLIC and ODINAFRICA has made it much easier to access documents that are not locally available. Online access to AGORA, HINARI, OARE, INASP and DOAJ has also enabled the library to meet some of its requests.

Keywords: marine science, fisheries, aquatic sciences, Kenya.

The Kenya Marine and Fisheries Research Institute was established in 1979 from the defunct East African Marine and Freshwater Research Organization (EAMFRO). The institute is charged with responsibility of conducting research and making management recommendations essential for the national exploitation of aquatic resources in the marine and freshwaters in the hinterland. There are nine research and field stations countrywide with the mandate of undertaking research in marine and freshwater fisheries, aquatic sciences, biological, chemical and physical oceanography, limnology, pollution, natural products and marine geology.

The KMFRI Library serves both marine and freshwater sectors with books, pamphlets, periodicals and reprints; this includes publications deposited by the government and international organizations and other institutions dealing in marine research work. The library inherited its initial collection from EAMFRO but the period 1979-1984 saw little growth in terms of information resources due to budgetary constraints. In 1985 a joint Kenya/ Belgium program in marine science was launched. Among the preliminary problems that faced the research team during the initiation of the program was the lack of relevant literature about aquatic resources of the region. The Limburg University Centrum was approached, conducted a feasibility study and came up with these findings:

1. Lack of relevant bibliographic information by the researchers;
2. Lack of communication between KMFRI researchers and the rest of the world;
3. Lack of infrastructure for information dissemination and exchange;
4. Lack of or inadequate funding for the Library.

The Limburg University Centrum (Luc) and Kenya Marine and Fisheries Research Institute made informal arrangements to supply documents to the researchers and a route to greater inter-library cooperation was initiated giving birth to RECOSCIX-WIO and later ODINAFRICA.

Regional Cooperation in Scientific Information Exchange in the Western Indian Ocean region was effectively launched in 1989 with funding from IOC of UNESCO while the KMFRI Library hosted and provided infrastructure and staff. RECOSCIX-WIO worked towards establishing a lasting network of marine and aquatic institutions in the western Indian Ocean region, with the regional dispatch centre in Mombasa as its central node; this was aimed at promoting the scientific capabilities of the region.

The cooperation between the Limburg University Centrum (LUC) and KMFRI had these objectives:

1. Provision of bibliographic on scientific information to marine Scientists in the region and make full use of scientific literature available in the region;
2. Promote and facilitate communication between marine scientists in the region and other regions;
3. Promote scientific activities within and outside the region;
4. Provide scientific information, equipment, software and training to make full use of the information.

Upon the winding up of RECOSCIX-WIO, the Ocean Data and Information Network for Africa (ODINAFRICA) was launched as its follow up which covered most of Africa's coastal states which was to enable the states of Africa to:

- Get access to data available in other centers.
- Develop skills for manipulation of data.
- Prepare data and information products.
- Develop infrastructure for archival analysis.
- Disseminate data and information products.
- Develop AFRILIB (a catalog of library holdings in the cooperating institutions).
- Document delivery services.

The ODINAFRICA Information Services Centre in Mombasa provided a document delivery service to experts from the ODINAFRICA institutions. The documents were sourced through a network of more than 13 marine science libraries worldwide. The most active of the collaborating libraries included Limburg Universitair Centrum (Belgium), IFREMER (France), Fresh Water Institution (Canada), the National Museum (Kenya), the National Institute of Oceanography (India), FAO Fisheries Branch Division (ITALY), University of Nairobi (Kenya), the International Centre for Insect Physiology and Ecology (Kenya), International Centre for Living Aquatic Resources and Management (Malaysia), Southampton Library (UK), Oregon State University (USA), Rosentiel School of Marine and Atmospheric Science (USA) and the National Centre for Marine Research Library (Greece). The ARIEL electronic document delivery software was used at the regional to reduce delays in delivery. The project office coordinated the participation of information centers in Kenya, Senegal, Seychelles, and Tanzania in trials of electronic document delivery using PROSPERO. This software and ARIEL were then free; budgetary restrictions in the institutions had previously been unable to supply them. The second phase of ODINAFRICA was developed to address the requirements that had been identified, taking into account the work already done by RECOSCIX-WIO, in particular aiming at enabling member states from Africa to get access to data available in other data centers, developing skills for manipulation of data and preparation of data and information products, and developing infrastructure for archival, analysis and dissemination of the same. AFRIPUB (a catalogue of scientific journals, articles and monographs published by Africa Ocean Scientists) and AFRICURRENT (an awareness tool based on user's profiles of specific subject interests) were some of the services offered.

Fig.1 Map showing countries that participated on ODINAFRICA activities marked in red.

The Internet and the Web are constantly influencing the development of new modes of scholarly communication in the way information is gathered, store, organized, accessed, retrieved and consumed. Their potential for delivering goods is quite vast, as they overcome successfully the geographical limitations associated with the print media. Some of the online databases used at the KMFRI library are AGORA, HINARI, OARE, INASP, DOAJ, making the delivery of documents much faster compared to earlier days when mail was the main means of communication; there are of course some challenges that must be addressed to make the process is complete. Electronic resources present the user with vast amounts of information, but there are concerns about the stability of the Internet connection, the need to sort through information to find out which are legitimate sources, and a need to train researchers in the use of e-resources. Some are not satisfied with the existing IT infrastructure within the organization. Some of the impacts of the use of e-resources to the scientists are:

1. The use of e-resources is very common among the researchers.
2. Researchers are dependent on e-resources to get the desired and relevant information.
3. E-journals have become a basic need for the researchers every day.
4. E-resources, are found to be less expensive and more useful for easy access.

KMFRI REPOSITORY

Fig 2. KMFRI Repository online library.

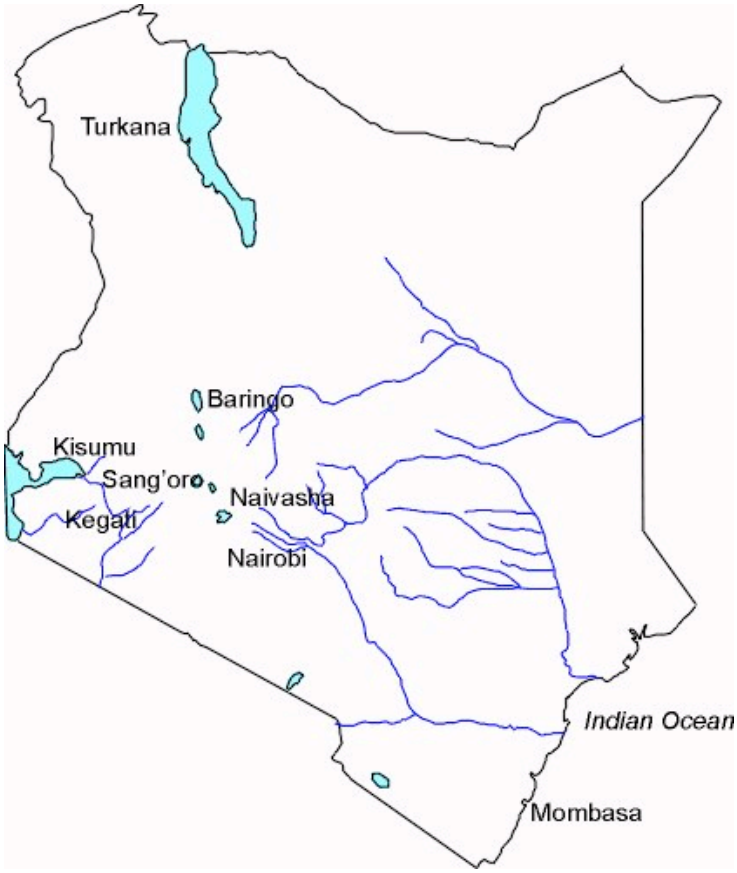

Fig. 3. Map showing the KMFRI inland research centers and headquarters in Mombasa where the main library is based.

References

Recoscix-Wio annual report (1996).
Recocsix-Wio annual report (1998).

WHICH ALTERNATIVE TOOLS FOR BIBLIOMETRICS IN A RESEARCH INSTITUTE?

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Abstract
Nowadays, bibliometrics is a frequently used tool in scientific and technical information, it can be useful to quantify scientific production and for collective or individual evaluations. Web of Science (Thomson ISI) and impact factor calculated by JCR are the better known references. We will underline the limits and setbacks of these overused indicators, especially the bias factor h. Other tools are emerging today. Our presentation will focus on comparing all these products, and we will study their interests for librarians and researchers.

Keywords : bibliometrics, factor h, evaluation, indicators

Introduction

Bibliometrics is the generic term for data about publications. Originally, work was limited to collecting data on numbers of scientific articles and publications, classified by authors and/or by institutions, fields of science, country, etc., in order to construct simple "productivity" indicators for academic research. Subsequently, more sophisticated and multidimensional techniques based on citations in articles (and more recently also in patents) were developed. The resulting citation indexes and co-citation analyses are used both to obtain-more sensitive measures of research quality and to trace the development of fields of science and of networks.

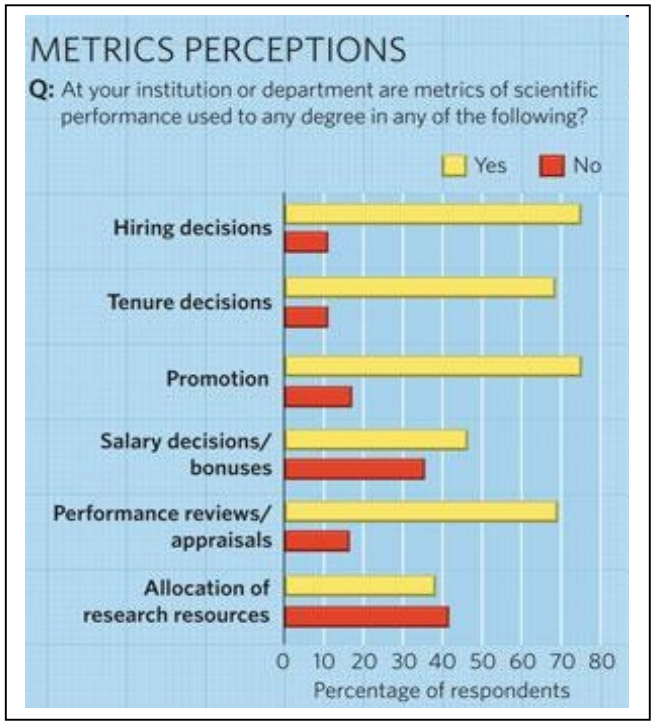
Bibliometric analyses use data on numbers and authors of scientific publications and on articles and the citations therein (and in patents) to measure the "output" of individuals/research teams, institutions, and countries, to identify national and international networks, and to map the development of new (multi-disciplinary) fields of science and technology.

Bibliometrics can be used to :

- Evaluate the journal's quality
- Follow up on the evolution of a research subject
- To have an idea of the principal actors of one theme
- Identify the article's impact
- Evaluate one researcher, their work, their research unit and their institute…

No research project that will contribute new or valuable information to the literature is complete until the findings have been written up, submitted to a recognized journal for consideration, and eventually published. Presumably, the person or persons chiefly involved in the work will be responsible for initiating the report for publication. Deciding who should or should not be an author or acknowledged can be a controversial issue, leading to unpleasant consequences, if it is not handled diplomatically and according to accepted standards. Basically, only those persons who have contributed intellectually and have participated in the work to the extent that they can and are prepared to take public responsibility for their part of the work should be authors. This would exclude gift authorship, which has been bestowed either as a tribute or as a ploy for recognition within the context of a reciprocal exchange, and guest authorship.
But in fact it's not so simple: metrics are often misunderstood, misinterpreted, or misused. No scientist's career can be summarized by a number. He or she spends countless hours troubleshooting experiments, guiding students and postdocs, writing or reviewing grants and papers, teaching, preparing for and organizing meetings, participating in collaborations, serving on editorial boards and more, none of which is easily quantified. But

when that scientist is seeking a job, promotion or even tenure, which of those duties will be rewarded? Many scientists are concerned that decision-makers put too much weight on the handful of things that can be measured easily – the number of papers they have published, for example, the impact factor of the journals they have published in, how often their papers have been cited, the amount of grant money they have earned, or measures of published output such as the h-index. 150 readers responded to a Nature poll designed to gauge how researchers and administrators believe such metrics are being used at their institutions, and whether they approve of the practice. The results suggest that there may be a disconnect between the way researchers and administrators see the value of metrics. Three quarters of those polled believe that metrics are being used in hiring decisions and promotion, and almost 70% believe that they are being used in tenure decisions and performance review.



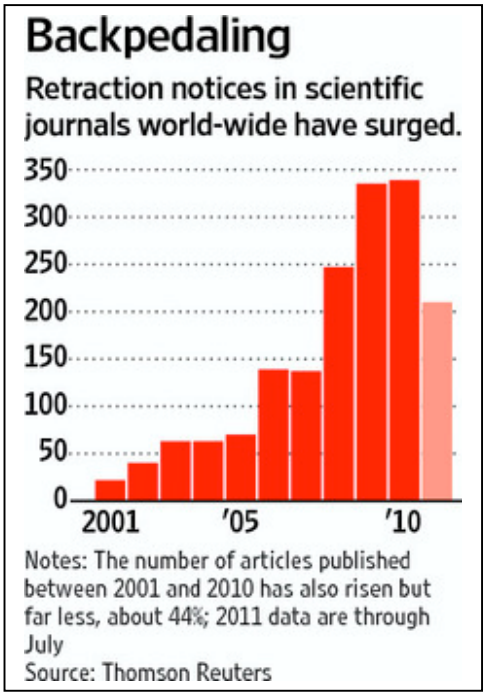
Poll respondents and administrators agree that metrics have potential pitfalls. For example, 71% of respondents said they were concerned that individuals at their institutions could manipulate the metrics, for example by publishing several papers on the same basic work. The challenge for administrators, it seems is not to reduce their reliance on metrics, but to apply them with more clarity, consistency and transparency.

Which measure with which tools?

Journals evaluation: Impact factor (JIF) and JCR
The impact factor, proposed by Eugene Garfield, is a ratio between citations and recent citable items published. A higher impact factor generally indicates that this journal's articles have been cited more. JCR is divided in 180 categories, it is linked to WOS, update each year and it is calculated on 2 years window.

When the 2 year impact factor was designed, it was intended to be an aid to librarians making decisions about which journals to purchase so that they could get a rough sense of a journal's influence in the field. In this context, the impact factor makes sense. Nonetheless, the use of the impact factor to judge individual scientists, departments and institutions is a remarkable case study in the law of unintended consequences.

Since 1960, worldwide researcher evaluations are run by a private society Thomson ISI.
However, placing too much emphasis on publication in high impact factor journals is a recipe for disaster. At the extreme, it creates temptation to falsify data.



Since 2001, while the number of papers published in research journals has risen 44%, the number retracted has leapt more than 15-fold, data compiled for The Wall Street Journal by Thomson Reuters reveal.

Why the backpedaling on more and more scientific research?

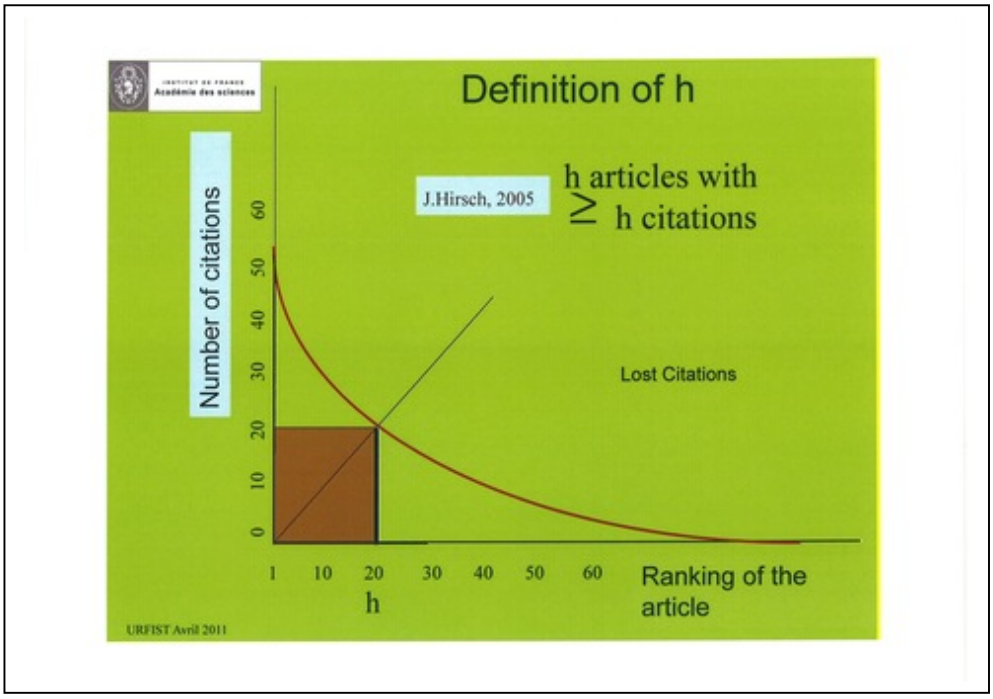
Some scientific journals argue that the increase could indicate the journals have become better at detecting errors. They point to how software has made it easier to uncover plagiarism. Others claim to find the cause in a more competitive landscape, both for the growing numbers of working scientific researchers who want to publish to advance their careers, and for research journals themselves.

"The stakes are so high," said the editor of *The Lancet*, Richard Horton. "A single paper in *Lancet* and you get your chair and you get your money. It's your passport to success."

Retractions related to fraud showed a more than sevenfold increase between 2004 and 2009.

In Australia, it's the end of an era. The journal ranking system got dumped after scholars complained. At Toronto University, the President, David Naylor, said "Maclean (Canadian universities ranking) is useful for one thing only: Marketing, none of us really believe that the ranking has much intellectual rigour. "The program had drawn attention from officials in the United States and Europe who are also testing new ways to measure quality

Researchers' Evaluation: h Index



To have a good h index, it's not enough to publish, it's necessary to be cited as long as possible. So the h index is most suitable for researchers who have at least 10 years of research behind them. As we see with Ike Antkare, it's possible to do hacking with h index, as he became one of the highly cited scientists of the modern world with an h index of 94, but most references are fake.

What are the trips and tricks to increase your h index?

- You must disseminate your publication in open archives (Google Scholar, Citebase…).
- You can practice autocitation.
- You can also be in a category uch as guest authorship, gift authorship, etc.
- You must increase collaborations, multiply international citations, get your name out through meetings, refereeing, etc.
- A good solution can be to publish controversial articles or reviews that will be more cited.
- Study the fate of publications to analyze which are cited longer (use WoS citation mapping)

Institution Evaluation: Shanghai Ranking

Shanghai academic ranking of world universities is the reference for almost all universities

Indicators and Weights for ARWU

Criteria	Indicator	Code	Weight
Quality of Education	Alumni of an institution winning Nobel Prizes and Fields Medals	Alumni	10%
Quality of Faculty	Staff of an institution winning Nobel Prizes and Fields Medals	Award	20%
	Highly cited researchers in 21 broad subject categories	HiCi	20%
Research Output	Papers published in Nature and Science*	N&S	20%
	Papers indexed in Science Citation Index-expanded and Social Science Citation Index	PUB	20%
Per Capita Performance	Per capita academic performance of an institution	PCP	10%
Total			100%

If we look closer at this ranking criterion, we see that this ranking is based to 50% on ISI, we have redundant criteria (Nobel, Fields Medals), and indicators are heterogeneous. In France, for example, research is carried out in institutes like CNRS or INSERM and not in universities, which explain France's poor rating.

Alternative Tools
It's necessary to promote qualitative alternative tools rather than dominative quantitative model.

Journal Evaluation: Eigen Factor: http://www.eigenfactor.org/index.php

It's a free tool that eliminates autocitations. The algorithm calculation includes more parameters, such as:

- Google's Pagerank algorithm.
- Citations from highly ranked journals weighted to make a larger contribution to the Eigen factor than those from poorly ranked journals.
- It differentiates citations coming from different disciplines.
- Journal prices.
- Calculation is for a 5 years window,

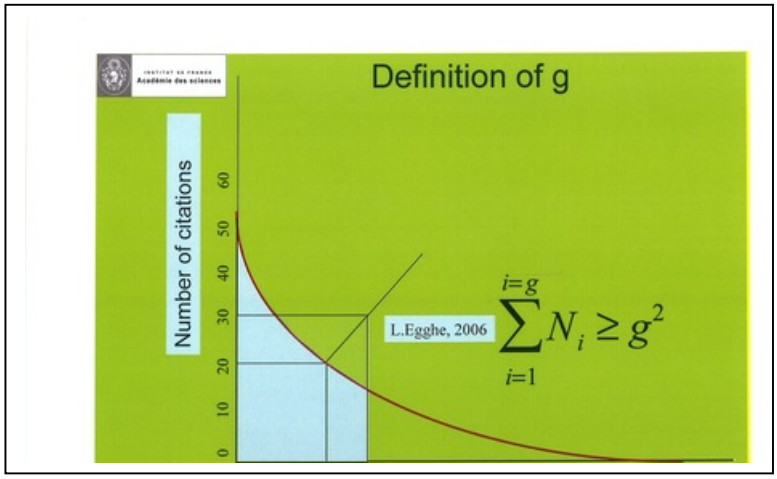
Eigen factor visualization - http://well-formed.eigenfactor.org/ is interesting to see interactions in different fields for a specific journal

SCImago or SJR indicator

The **SCImago Journal & Country Rank** (SJR) is a portal that includes the journals and country scientific indicators developed from the information contained in the Scopus® database (Elsevier B.V.) http://www.scimagojr.com/. It considers not only the number of citations received for a study, but also the importance or influence of the actors who issue those citations. The results showed that SJR indicator and JIF distributions fitted well to a power law distribution and that both metrics were strongly correlated, although there were also major changes in rank. There was an observable general trend that might indicate that SJR indicator values decreased certain JIF values whose citedness was greater than would correspond to their scientific influence. This new metric represents scientific impact as a function not of just the quantity of citations received but of a combination of the quantity and the quality. It is very useful to compare journals or countries in the same field, and the charts are very clear.

Researchers' Evaluation: g Index

This was suggested in 2006 by Leo Egghe.



G index increases faster than h index, as it takes into account articles that are highly cited, However, it is more complicated to calculate, which is why it doesn't replace the h index

The University of Southampton ranks 3rd in the UK and 25th in the world in the G-factor International University Ranking, a measure of "the importance or relevance of the university from the combined perspectives of all of the leading universities in the world... as a function of the number of links to their websites from the websites of other leading international universities" compiled by University Metrics. Why is its rank so remarkably high (second only to Cambridge and Oxford in the UK, and out-ranking the likes of Yale, Columbia and Brown in the US)? Long practise of what it has been preaching -- about maximising research impact through Open Access Self-Archiving -- is a likely factor.

Conclusion

Too often, ranking systems are used as a cheap and ineffective method of assessing the productivity of individual scientists. No one enjoys being measured –unless he or she comes out on top. That's human nature. So it's important to remind scientists that metrics can be a friend, not a foe. We need to stop misusing rankings and instead demonstrate how they can improve science. The publishers and grant givers in the game of science have the incentive and the power to implement such rules. What sort of behaviors should be encouraged, and how best to do that, remains very much an open question.

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SMART FISHING FOR INFORMATION: USING OPEN ACCESS AND FREE INFORMATION RESOURCES FOR FINDING AND PUBLISHING FISHERIES SCIENCE IN AFRICA

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7th IAMSLIC Conference
Zanzibar, Tanzania, October 16-20, 2011

Abstract: In the past, fisheries and aquaculture researchers in Africa have been handicapped by poor access to current scientific literature and difficulties in getting published in visible outlets. Efforts in the past decade to improve access, awareness and use of information have flourished. We examine whether these efforts are reflected in the output of African fisheries scientists. We also explore the how the Open Access movement may be influencing the dissemination of African fisheries science.

Keywords: Open access, publishing, fisheries journals, Code of Conduct

Introduction

Fisheries and aquaculture researchers in Africa have been handicapped by poor access to current scientific literature and difficulties in getting published in visible outlets (FAO 2009, p.71-72). Various efforts over the past decade work to alleviate the issue of access. Open Access (OA) journals provide possible outlets for communication of research. Our studies of the African fisheries literature, the delivery system and the relevant journals titles are not intended to compare systems, databases or journal content nor as a bibliometric study. They are an attempt to assess where African affiliated fisheries researchers are publishing scholarly articles, how they are citing current scientific literature and which search systems are useful for discovery and communication. We try to evaluate whether access to peer review journals via 'philanthropic' services and the increase in OA is having an impact on previously expressed barriers to communicating African fisheries science and management.

In the following, we address two of the major information constraints in Africa as described in Information and Knowledge Sharing: FAO Fisheries Technical Guidelines for Responsible Fisheries. No. 12, 2009:
Lack of awareness of and access to global information resources;
Poor opportunities to publish and disseminate the results of research.

We intend this study to be a means for discussing successes to date as well further actions needed. IAMSLIC members continue to have a role in facilitating communication of their institution's research. We can work to enhance access, teach searching skills and promote relevant publishing options. We also have a responsibility to develop indicators of progress in addressing these constraints. Funders are interested in seeing the benefits of their investments and our institutions need to know the value of their funding of their libraries.

Terminology

Open Access (OA) means that information should be digital, online, free of charge, and free of most copyright and licensing restrictions. OA is a model for publishing scholarly peer reviewed journals that can be freely read as the publishing is funded through means other than library or personal subscriptions. Models include "author pay", "institution pays", and volunteer effort. The 2009 OA-barometer, a project funded by Nordbib, estimates that 20% of peer-reviewed articles across all disciplines are now freely available (Björk et al 2010; Laakso et al. 2011). Extensive background information can be found in Open Access Overview (Suber, 2010). New developments are covered by the OA Tracking Project, an effort using tagging, wiki software and social media to track OA activities.

Peer Review is the accepted practice for assuring the quality of scientific articles. Peers are considered those knowledgeable in a field who can ascertain whether an article submitted for publication is scientifically sound, addresses an issue or question of interest to the intended audience and communicates the problem, methods and findings in a coherent manner.

Constraint 1: Lack of awareness of and access to global information resources

Awareness, access and use are linked. A breakdown of any of the three poses a constraint to the scientific process. Measuring each is challenging and we used several approaches. We reviewed what resources were available. We surveyed librarians on their awareness, access and use of available resources. We examined what African fisheries scientists were publishing and what they used in those publications.

Access to Global Fisheries Information
Several programs to improve access to current scientific information have gained visibility and usage in Africa. Even so, problems persist. Internet connectivity remains uneven making downloading an article in PDF time-consuming and unappealing. Discovery is easier with Google, yet less effective as people refrain from going beyond what is easy and fast to access. The connectivity problem is geographically specific and must be dealt with at each institution. The lack of searching persistence is a global, human behavior issue that many librarians are addressing through teaching and consultation.

On the bright side, a wealth of scientific information in fisheries is much more affordable, and often free. Major sources of full text scientific information of interest to IAMSLIC members in Africa include:

- Research4Life (http://www.research4life.org/)
- The most relevant, real time, full text resources for peer-reviewed, scientific fisheries information.
- TEEAL (The Essential Electronic Agricultural Library) (http://www.teeal.org/)

Selected articles and journals on agriculture delivered annually on hard drive and appropriate for fisheries institutions with problematic internet access and a focus on agriculture.

- JSTOR (http://about.jstor.org/participate-jstor/libraries/african-access-initiative-0)
- Full text access to the archives of a wide range of scholarly journals, but with sparse coverage of fisheries and aquatic titles.
- AJOL (http://www.ajol.info/)
- The gateway to the largest collection of peer-reviewed, scholarly African journals with a mixture of OA and priced journals.
- INASP PERii (www.inasp.info/). Access to peer-reviewed, scientific information by individual publishers, making administration more cumbersome. Other aspects of PERii are more useful for fisheries scientists such as training on how to publish.
- DOAJ (Directory of Open Access Journals) (www.doaj.org)
- The most complete portal to open access journals and global in coverage but does not include African fisheries journals.

Each has strengths and weaknesses in terms of coverage, ease of use, cost, and ease of administration. In our assessment the Research4Life Programme has the greatest coverage of fisheries and aquaculture journals, in particular AGORA that is provided via FAO and has been targeted at fisheries institutions.

Awareness and Use of Research4Life/AGORA by Afriamslic Members
The Research4Life Programme of the United Nations (www.research4life.org) is the name given to HINARI, AGORA and OARE, the three programs that offer developing countries free or very low cost online access to publisher supplied science information. HINARI focuses on the medical and life sciences, AGORA on agricultural and OARE on the environmental literature. While other philanthropic programs provide access to commercial journals, the subject focus of the Research4Life systems makes these more relevant for fisheries.

Working collectively as Research4Life, the services will soon offer one point of registration for eligible institutions. For now, librarians must register for each service. Registration is available to institutions via their library so those fisheries researchers and managers working outside of an institutional context do not have access to AGORA. The onus is upon the library to register and ensure that their scientists are made aware and have access.

In July 2011, Research4Life and Serials Solutions, a business unit of ProQuest, announced that they are working together to implement a simple and unified search system for the entire Research4Life collection. This will make access to all fisheries relevant articles more efficient. Currently, a researcher must search all three systems due to

overlapping coverage. The implementation is happening country by county with Serial Solutions staff 'adopting' a country.

The 32 Afriamslic members, eligible for free access to AGORA, were surveyed in August 2011. Nine replies were received from members in Ghana, Kenya (2), Malawi, Mozambique, Nigeria (2), Tanzania and Uganda. 75% of those surveyed did not respond. Brief feedback was requested mainly on the use of AGORA, HINARI and OARE.

	Used by Libraries	Used weekly or more	Used monthly or less
AGORA	7	6	1
HINARI	2		
OARE	3		

Table 1: Survey of Afriamslic members

AGORA is recognized as an excellent resource by those Afriamslic members who responded. Usage is increasing according to survey respondents. There are some inconsistencies in coverage by some publishers. One example is Springer who blocks access to its publications in a country if an institution in that country takes out a subscription. The search interface is cumbersome because it takes multiple steps to get to the needed article. Internet speed remains a problem so downloads can be slow. Overall, Afriamslic users find that usage is expanding beyond the library to researchers throughout the participating institutions. AGORA is becoming a vital tool.

The low response could be an indicator of lack of awareness that then leads to lack of access and use. A more detailed study of who is registered for and using AGORA would increase our understanding of how well AGORA works for Afriamslic librarians and their users. If Afriamslic librarians are not providing access to this rich resource, then their scientists have not overcome this constraint. The new developments in Research4Life are proposed to improve the service. These changes could provide an excellent time to promote AGORA to all who would benefit.

Use of IAMSLIC Distributed Library

Another means of accessing information for Afriamslic members is the IAMSLIC Distributed Library. It is useful for getting material unavailable through AGORA or other full-text resources. The volume of activity by Afriamslic members is increasing. However, in 2010/11, only 7 of the 26 countries with Afriamslic members used the system. Table 2 shows the number of borrowing and lending requests by country. The lack of use probably reflects either uncertainty with how to use the system or lack of need to use it. But this pattern reinforces the question about awareness versus access versus use.

Countries	# Requests	# Supplied
Botswana	7	
Kenya	160	9
Namibia		5
Nigeria		6
South Africa	12	32
Tanzania	7	
Tunisia	13	

Table 2: Use of IAMSLIC Distributed Library in 2010/11

Impact of Expanded Access to Global Fisheries Information

Access to current scientific information has increased in the past decade. We attempted to discover if this increased access has resulted in changes in what African fisheries scientists use in their work. Using Aquatic Sciences and Fisheries Abstracts (ASFA), we searched the author affiliation field for those eligible in Africa for free access to AGORA and the descriptor field for "fisheries or aquaculture." The results were limited to peer-reviewed publications as defined by ASFA because including all publication types provided a skewed picture of output given inconsistent input in terms of time and content. The references in the remaining articles were counted, sorted by type and year of publication. We compared 1995, 2000, 2005 and 2010. (A note: in 2000, there were 11 peer-reviewed articles but 2 of those were not available to the authors after extensive searching. We changed the number 9 given that the articles were not available, so virtually non-existent.)

Figure 1 reveals little in the way of a trend in either number of papers or increased usage of information. There are limits to ASFA so this data may not be complete. There can be time lags and discrepancies in coverage. It is also important to consider what ASFA considers to be peer-reviewed. We suggest that it is too early to tell if increased access to information will foster increased publication.

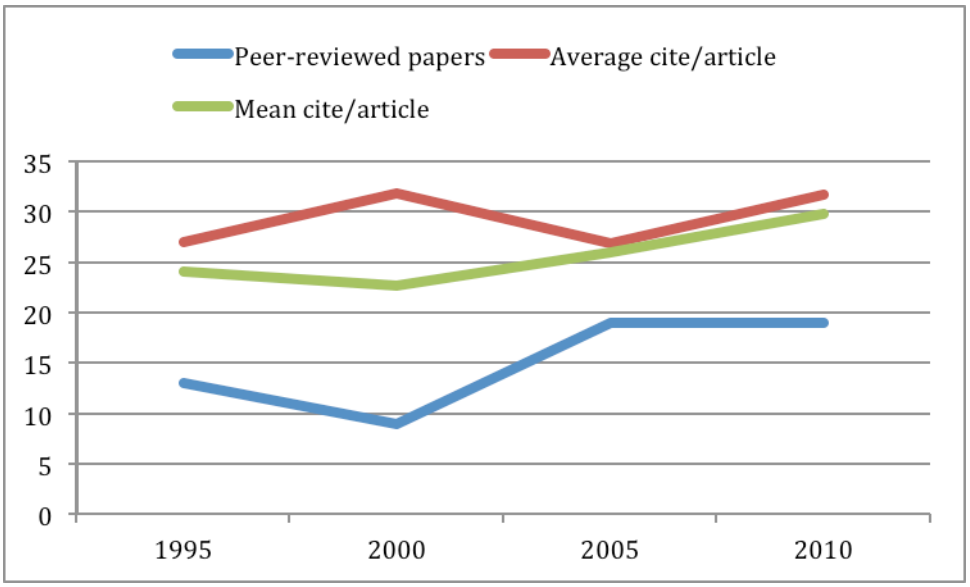

Figure 1: Trends in publishing

In Figure 2, we show the types of materials cited in the peer-reviewed articles. References were tagged in one of three categories: a scholarly article (any article that seemed to be from a reputable source), a book, or other (reports, newsletters and other grey literature including FAO publications). We show the data in 100% columns so the number of citations and number of articles are not relevant. Again, there is no apparent trend towards the use of more articles. The reliance on other types of information does not indicate poor scholarship. The grey literature is extremely important in fisheries science and especially in fisheries management where local reports, surveys and assessments are essential information and data sources.

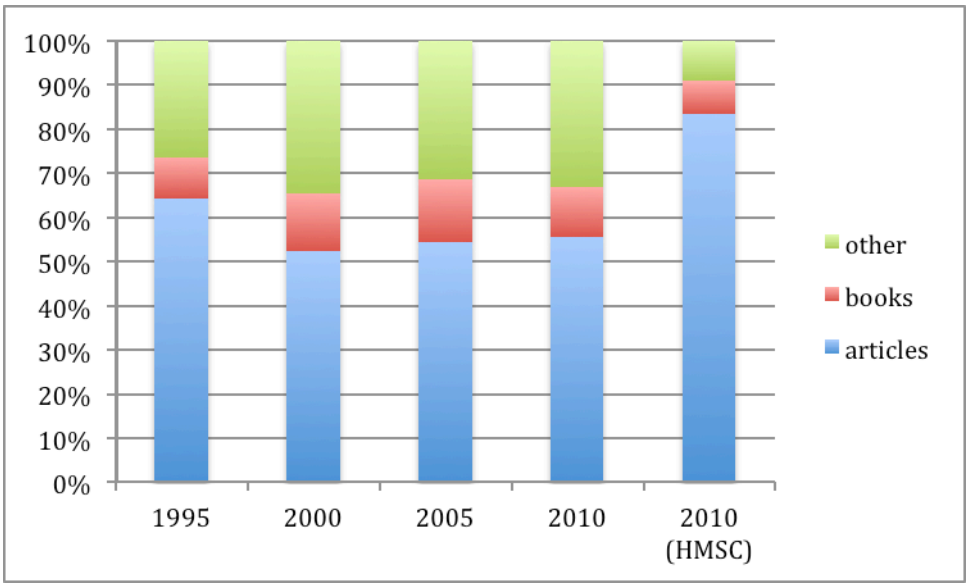

Figure 2: Types of materials cited

For comparison, we searched the same terms (fisheries or aquaculture) and used an author affiliation of one of the authors' institutions (Oregon State University's Hatfield Marine Science Center - HMSC). While the number of peer-reviewed articles for 2010 was comparable, the mix of types used by HMSC researchers reflect greater reliance on the peer-reviewed article.

Finally, we looked at the age of all references in the peer-reviewed articles. We divided the number of citations by the number of articles to get a clearer picture of trends. In general, Figure 3 shows a fairly consistent trend of use by year. The sharp drop in recent (0-3 years old) material cited reflects the publication process where a manuscript is submitted for review and then usually not published for months (or years). There is solid use of information published in the past ten years and then a trailing off. The occasional review article tends to skew the data, but these were in every group so the effect is shared. Again, the comparison with HMSC data shows similar patterns of cited references in terms of age.

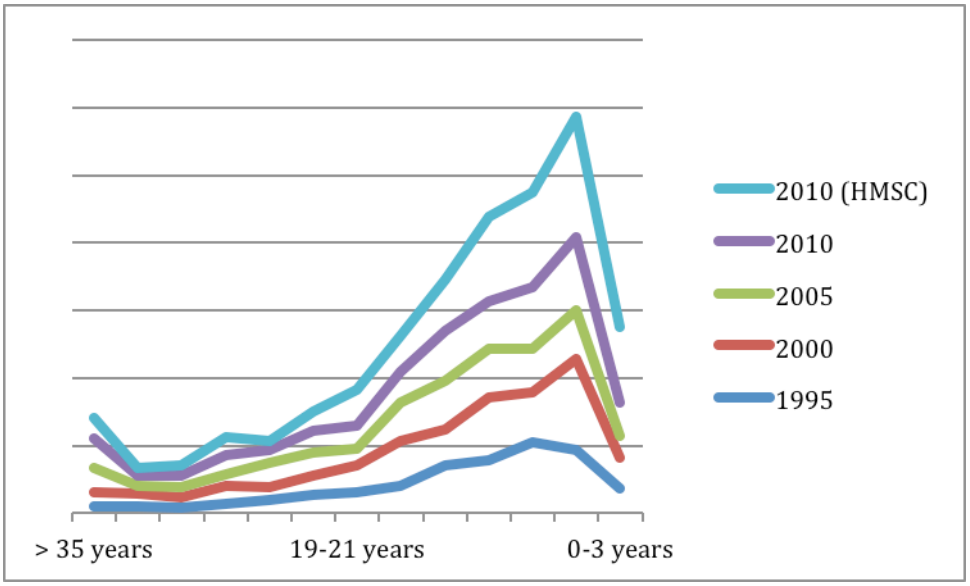

Figure 3: Age of material cited

It takes time to change habits, introducing new ways of discovering information and incorporating the newly found information into research and then synthesizing the results. The data presented above may reflect a lack in any of the areas of concern: awareness, access and use. So, we suggest that we continue to monitor where African researchers are publishing and what they are using. Both help librarians know which resources are important for their users. Also, it helps build the case for continued support of AGORA as a provider of access to the wealth of fisheries information.

Constraint 2: Poor opportunities to publish and disseminate the results of research

Poor opportunities to publish and disseminate the results of research have long been constraints for fisheries scientists in Africa. Several initiatives to assist authors aim to remedy this situation. African Journals Online (AJOL, 2011) provides a useful page of links to open resources and writing guides. The International Program for the Availability of Scientific Publications (INASP, 2011) supports the AuthorAid project that assists authors in developing countries improve their communication skills.

The reasons given by researchers for low acceptance rates of African fisheries articles in commercial high impact journals are many (Freeman & Robbins, 2006). Given our results from the first section, the challenge persists. It is interesting to see whether the increase in OA publishing is providing an effective outlet for their work. Measures of effectiveness include publishing in peer-reviewed, high quality and up-to-date journals that are relatively easy to find and not too remote from the general body of fisheries information. It is also relevant to note that the OA Barometer estimate of 20% varies across disciplines and we found no statistic on the percentage of fisheries science available as OA.

Publishing African fisheries research in OA journals

We searched using freely available search engines and systems that index OA scholarly journals to give an indication of where African fisheries research is being published beyond the traditionally defined sphere. From this small sample of articles published in 2010, we found that OA journals are publishing African fisheries research and that a very large percentage of the authors have an African affiliation. Unexpected results included the spread of articles across a large number of multidisciplinary journal titles and the limited number of 2010 articles in journals specific to fisheries or aquatic science. Articles on African fisheries published in 2010 appeared in over 40 different OA journal titles. The time lag in OA fisheries journals published in Africa appears to be a problem. For example, AJOL lists two OA journals in the fisheries/aquatic science categories but neither of them has a publication date

later than 2009. The OA fisheries articles retrieved in AJOL were published in 9 different journals in other subject categories and 94% have authors with an African institutional affiliation. See Appendix Table A2.

DOAJ is considered the primary index of OA journals and is global in coverage. Subject categories include Aquaculture and Fisheries with 18 journals and Oceanography with 31 journals. However, neither of the two African OA fisheries journals are covered by DOAJ. The fisheries articles retrieved were published in 17 different journals in other subject categories. Authors with an African institutional affiliation made up 83% of these. See Appendix Table A1.

Table 3 gives an idea of the problems with publishing in African fisheries journals. There are time lags in publishing, gaps in indexing, inconsistencies in coverage by databases and aggregators. In addition, very little is available as truly OA and none of them is covered by or linked from AGORA. Fortunately, HINARI provides access to the first two and highest impact African fisheries journals but less fortunately many AGORA users do not know this.

Journal	Open Access	DOAJ	Most recent issue in AJOL	Indexed in ASFA	Level of coverage in ASFA
African Journal of Aquatic Science (South Africa)	No	No	2011	Yes (2000-2011)	Core
African Journal of Marine Science (South Africa)	No	No	2011	Yes (2003-2011)	Priority
African Journal of Tropical Hydrobiology and Fisheries (Uganda)	Yes	No	2009 (not OA in AJOL)	Yes (1974-2001)	Selective
Journal of Aquatic Sciences (Nigeria)	No	No	2006	Yes (1986-2010)	Level not noted
Nigerian Journal of Fisheries (Nigeria)	No	No	2008	Yes (2003-2008)	Title not listed
Nigerian Journal Fisheries Science and Technology (Nigeria)	No	No	None	Yes (2009-2010)	Title not listed
Tropical Freshwater Biology (Nigeria)	No	No	2009	Yes (1988-2009)	Selective
Water SA (South Africa)	Yes	Yes	2011	Yes (1977-2011)	Selective
Western Indian Ocean Journal of Marine Science	Yes	No	2009	Yes (2002-2009)	Core

Table 3: African fisheries journals

Finding African fisheries research in OA journals

Table 2 in the Technical Guidelines 12 (FAO, 2009, pp. 86-97) lists various online fisheries information finding tools. We have further selected these to cover only those tools freely available and that retrieve mainly, or a significant proportion of, OA scholarly journal articles. We consider these tools the most relevant for fisheries and have grouped them in two clusters: journal aggregators, and search engines, repositories and harvesters. In terms of coverage, many systems cover predominantly English language sources and search interfaces are in English only. For the purposes of this study, we searched only in English.

As with all information searches it is preferable to have some knowledge of the tools:
What resources are covered?
How extensive is the coverage?
What is the depth of indexing?
How useful is the search interface?
It became apparent when searching freely available systems that there is little standardization, most require a degree of experimentation and manual intervention, and in some cases faith. Only those systems that retrieved significant recent African fisheries are described, although others were searched.

Using broad subject criteria and 2010 as the publication year, we analyzed search results from the selected tools for the availability of OA African fisheries articles. An indication of the percentage of authors with an African affiliation was noted. As was mentioned above, the spread of fisheries articles across a large number of

multidisciplinary journals is a feature of most searches. This dispersal of fisheries articles does not make it easier to discover and probably excludes their coverage by many subject specific databases.

Journal Aggregations
Several systems aggregate OA journal collections and provide a search interface to access their content. The most relevant systems for fisheries are DOAJ that covers only OA journals and AJOL that combines both OA and priced journals. Sample searches and analysis of the results from both systems is provided in the Appendix in Tables A1 & A2.

There are undoubtedly many journal aggregations that include articles about African fisheries, although to a lesser extent than those mentioned above. For example, BioOne was retrieved in the Google Scholar search. **BioOne** (www.bioOne.org) provides an aggregation of high-impact bioscience research journals. Through participation in philanthropic programs such as HINARI, AGORA, OARE, and eIFL it also provides its content to over 2,500 institutions in the developing world at no cost. It includes few OA journals.

Free search engines, databases, repositories and harvesters
Google Scholar provides a search of scholarly literature across many disciplines and sources, including theses, books, abstracts and articles. Searching African fisheries and categorizing a small sample gives an indication of the spread of publishing sources and the proportion of articles available as OA. Categorizing the provider of an OA article is not so straightforward as the definition of what is a publisher becomes more fuzzy Appendix Table A3 breaks down the sources into broad groups with their percentage of OA and author affiliation if available.

In addition to publishers of commercial journals with no OA, Google Scholar also indexes OA journal aggregators and individual OA publishers. There are an increasing number of the latter including those producing collections of scholarly journals, some of direct but most of marginal relevance for fisheries. Two worth mentioning because of their potential for African authors are: **Bioline International** (www.bioline.org.br/) is a not-for-profit scholarly publishing cooperative committed to providing open access to quality research journals published in developing countries. It includes active journals published in Egypt, Ghana, Kenya, Nigeria, Tanzania, Uganda. **BioMed Central** (www.biomedcentral.com) currently publishes 220 peer-reviewed open access journals and provides free, immediate and permanent online access to the full text of all articles. Through its open access waiver fund it tries to ensure that scientific authors in low-income countries do not face financial barriers to publishing in open access journals.

There are, however, a number of OA publishers emerging whose main purpose may not be to promote, preserve, and make available scholarship but to exploit the author-pays OA model for their own profit. The large number of OA journal publishers with articles on African fisheries gives some cause for concern, not least the difficulty in discovering this information and the possibility that it may not be available in the long-term.

Another category of OA articles retrieved through Google Scholar is the author posted free copies of manuscripts on different types of web sites. In the early days the home pages of the authors or their departments was typical and often problematic in terms of longevity and authentication. Today digital copies are increasingly posted in institutional and subject-specific repositories.

The nine institutional repositories in the sample included two African university repositories, one in Botswana and one in Nigeria. Over 40% of the authors retrieved in the other 7 repositories, also mainly universities, had an African institutional affiliation. Fewer documents were retrieved from the subject repositories and grey literature is predominant in most. The two repositories specific to fisheries and the aquatic sciences, **Aquatic Common**s (http://aquaticcommons.org) and **OceanDocs** (http://www.oceandocs.net/) will be covered in more detail in other sessions of the conference and therefore not covered here. However, both are indexed by Google Scholar.

There are a number of other subject repositories relevant for fisheries and the two examples from the Google Scholar search are good. For fisheries economics, **RePEc (Research Papers in Economics** http://repec.org/) is a collaborative effort of hundreds of volunteers in 75 countries to enhance the dissemination of research in economics. The heart of the project is a decentralized database of working papers, journal articles and software components. For coverage of aquatic biology, fish in nutrition and health there is little to beat **PubMed Central** (http://www.ncbi.nlm.nih.gov/pmc/), a free full-text archive of biomedical and life sciences journal literature at the

U.S. National Institutes of Health's National Library of Medicine. The search for 2010 African fisheries retrieved 177 articles, all of which are available full text. This resource is growing in part due to the U.S. mandate that all those receiving funding from the U.S. National Institutes of Health must make their findings publicly available in PubMed Central. This model is interesting to monitor.

The general subject search we conducted resulted in massive numbers of hits and is not recommended. However, the breadth of coverage makes Google Scholar useful for more specific subject searches. Most users, researchers as well as students, tend to stick to one information finding tool that they know, that is easy to use and gives speedy results. Google is the default for many but using the same search strategy with no date limitation possible gives 75 million hits. Using Google for anything other than very specific information searches is hazardous in a research context. Google Scholar allows more search features as well as limiting its coverage to mainly scholarly material.

An efficient way of searching across repositories is via a Harvester. The most relevant for fisheries is **AVANO** (http://www.ifremer.fr/avano/), developed by Ifremer. It provides access to almost 300,000 electronic resources about the marine and aquatic sciences from the OAI harvesting of 297 Open Archives and 2 commercial editors. The search results for African fisheries published in 2010 include 38% from DOAJ and 25% from university repositories. See Appendix Table A4.

Findings and Suggestions

Constraint 1: Lack of awareness of and access to global information resources
More information systems and full-text content have become available to African fisheries scientists in recent years. The collaborative efforts of donor agencies and publishers to provide online access to extensive collections of scholarly journals have achieved what was impossible in the days of print and before the OA movement provided alternative and additional resources. Access to the information needed depends on a knowledge of which of the many systems cover what resources and how well. For example, most participants at the 2011 IAMSLIC Conference were unaware that the two commercial and highest impact African fisheries journals are covered by HINARI but not by AGORA.

Access can be confusing when it is available some of the time to some people for different costs. Journals that are made available as OA for a limited time or for a limited audience are part of this dilemma and may even dissuade use. Another example is when philanthropic efforts to improve access become marketing opportunities and access to a particular journal is inexplicably blocked in a particular country. The systems we searched presented an enormous range of indexing practices and search interfaces, which means that access depends on continuously updating user skills.

Making information resources available does not automatically translate into awareness and ultimately use. Levels of awareness of the vast array of systems varies, even where connectivity is not the major concern. In some cases, too many choices can be daunting and end-users revert to what they know, even if it is a less effective tool. The lack of response from the majority of Afriamslic members to our AGORA survey and low use of the IAMSLIC Distributed Library in Africa are likely indicators of lack of awareness. IAMSLIC's Resources Sharing Committee advertises and provides guidance on the use of the IAMSLIC Distributed Library. The FAO Fisheries Library through its interactions with member libraries promotes the IAMSLIC Distributed Library and AGORA.

A recent training initiative in the health sector involves higher-income institutions working with visiting international students and scholars to introduce them to Research4Life so they are avid users and advocates for the service upon returning to their home institutions (Parker, 2011). This model could be promoted to IAMSLIC members who host students and researchers from African fisheries and aquatic science institutions.

The peer-reviewed journal is important and citing that literature indicates a familiarity with the field and current developments. However, the grey literature remains a rich resource for fisheries scientists and is reflected in their work. Local and regional science is as important and often more relevant in addressing local problems. While access to the peer-reviewed literature has improved, access to the grey literature and regional science remains patchy. Databases such as ASFA play an important role in indexing this information but more needs to be done to improve linking to the full text of grey literature and OA journals. As a library community we have the opportunity to participate in the Aquatic Commons and greater efforts are needed to incorporate African fisheries literature.

Constraint 2: Poor opportunities to publish and disseminate the results of research

African fisheries scientists have more options of where to publish, but also more questions about how to choose. There is perceived prestige in publishing in commercial, global journals. These may not be the best means of disseminating research results. If the primary audience is local and access is limited by cost, poor internet connections or institutional affiliation, readily accessible OA journals, regional publications and institutional reports may prove to be better communication mechanisms.

OA scholarly journals are definitely providing an alternative publishing outlet for African fisheries science. Articles by African affiliated authors were retrieved in over 40 OA journals across a wide range of disciplines. Very few of these were specific to fisheries or aquatic science. One excellent example of an OA fisheries-related journal with international coverage is *Knowledge and Management of Aquatic Ecosystems*. Those published in Africa are few in number and there is often a time lag in publishing, hence excluding them from our search results and possibly from aggregators such as DOAJ.

The dispersal of fisheries articles in other disciplines may indicate the lack of a suitable OA fisheries journal or that authors find the easiest solution for swift publishing. It probably excludes their coverage by subject specific databases and certainly does not make it easier for users to discover them considering that freely available search tools have little to offer in terms of subject searching.

In addition to the many reputable OA publishers, there is also some concern that many new ones are emerging whose ability to promote, preserve and make available scholarship may not be a long-term prospect. This is a serious consequence for authors who may have paid to publish only to find that their article, the journal or even the publisher ceases to exist.

There are opportunities for librarians to assist with the dissemination of research. Besides encouraging deposit in the Aquatic Commons, we should be able to advise our research community on appropriate outlets for publishing including reputable OA publishers and journals. We can nominate journals for coverage in DOAJ and ASFA. Finally, we can engage with researchers and publishers to investigate what is needed for a truly OA, robust high quality African fisheries journal.

Measuring The Progress

These two major information constraints present challenges and opportunities for librarians. While the constraints have existed for decades, the 1995 Code of Conduct for Responsible Fisheries was a catalyst for examining how to improve fisheries management and consequently improve the health and livelihoods of people dependent on fish as food as well as protecting the aquatic environment. We are making progress towards improved access, awareness and use. It is wise to take stock of that progress from time to time. We can inform our funders that their investments are needed by measuring usage of global and local fisheries information, and documenting the access to African fisheries information.

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Appendix: Open Access Resources

Directory of Open Access Journals (DOAJ) (www.doaj.org)
DOAJ provides categorized, searchable links to free, full text, quality controlled scientific and scholarly journals. It currently covers 6820 journals, of which 3087 are searchable at article level. DOAJ has become the primary index of OA journals, and also provides long term archiving possibilities via an agreement with the Dutch National Library.

The subject category Aquaculture and Fisheries lists 16 journals, however only one of these is found in the search results, the remaining articles are from 16 different journals in other subject categories.

Search strategy and results:
Found 1088 documents matching the query Title=fish OR Title=fisheries
With PY=2010 (manual) = 196 With Subject: Africa (manual) = Total 33 (4 irrelevant)

Of the 29 relevant articles, 24 have authors with an institutional affiliation in Africa i.e. 83% (excluding the international organizations).

Table A1. DOAJ search results

JOURNAL	Number of articles	Author affiliation
Advance Journal of Food Science and Technology	2	Tanzania x 2
American Journal of Applied Sciences	1	Nigeria
Asian Journal of Agricultural Sciences	2	1. Tanzania 2. Nigeria
Biogeosciences	1	Germany, Canada.
Current Research Journal of Economic Theory	2	Nigeria x 2
Current Zoology	1	Netherlands
Frontiers in Zoology	1	Austria
International Journal of Chemistry	1	Ghana
International Journal of Pharmaceutical and Biological Research	2	(Nigeria, Sweden) x 2
International Journal of the Commons	3	1. Norway, Germany 2. Denmark, Philippines, Malawi, Zambia, Mozambique 3. Zimbabwe, South Africa, Denmark
Iranica Journal of Energy and Environment (IJEE)	1	Nigeria
Journal of Agricultural Science	2	(UK, Nigeria) x 2
Journal of Applied Sciences	1	Nigeria
Knowledge and Management of Aquatic Ecosystems	3	1. International Org.: Cameroon, Egypt ; France 2. Burundi, Benin 3. Burundi, Benin, France
Onderstepoort Journal of Veterinary Research	2	South Africa x 2
Pakistan Journal of Nutrition	3	Nigeria x 3
Research Journal of Environmental and Earth Sciences	1	Ghana

African Journals OnLine (AJOL) (www.ajol.info)
AJOL is the world's largest and pre-eminent collection of peer-reviewed, African-published scholarly journals, currently covering 411 titles. Historically, it has been difficult for African researchers to access the work of other African academics. In partnership with hundreds of journals from all over the continent, AJOL works to change this, so that African-origin research output is available to Africans and to the rest of the world.

Search strategy and results:
TI = fish or fisheries Input Years = 2010 & 2011 PY (manual) = 2010 Total = 48 (1 irrelevant)

Of the 25 journal titles with relevant articles, 9 of them are available free to all users i.e. 36%. Libraries in low income countries have a quota of 12 free articles per month from journals that are not OA. Of the 16 relevant articles in the OA journals, 15 of them have authors with an institutional affiliation in Africa i.e. 94%

The majority of journals categorized as fish and fisheries in AJOL do not appear in the results.

Three important journals have no issues later than 2008/9 in AJOL:
African Journal of Tropical Hydrobiology and Fisheries; Nigerian Journal of Fisheries; Western Indian Ocean Journal of Marine Science. Similarly from the category of Aquatic Sciences, two additional journals are missing for the same reason: Journal of Aquatic Sciences; Tropical Freshwater Biology.

Of the 9 OA journal titles from the AJOL search results, 3 of them are not covered by DOAJ: African Journal of Environmental Science and Technology; Ethiopian Journal of Environmental Studies and Management; Journal of Agriculture and Social Research

Table A2. AJOL search results

Journal	Articles	Author Affiliation	OA
African Journal of Aquatic Science (South Africa)	7		No
African Journal of Environmental Science and Technology	1	Uganda, Austria	Yes
African Journal of Food, Agriculture, Nutrition and Development	5	1. Norway, Tanzania 2. Malawi, Botswana 3. Tanzania 4. Kenya 5. Côte d´Ivoire	Yes
African Journal of Marine Science (South Africa)	7		No
Agro-Science	1		No
Bayero Journal of Pure and Applied Sciences	2	Nigeria x 2	Yes
Bio-Research	1		No
Bulletin of the Chemical Society of Ethiopia	1	Saudi Arabia	Yes
Ethiopian Journal of Environmental Studies and Management	2	Nigeria x 2	Yes
Ghana Journal of Development Studies	1		No
Global Approaches to Extension Practice: A Journal of Agricultural Extension	1		No
Global Journal of Pure and Applied Sciences	1		No
International Journal of Biological and Chemical Sciences	1		No
Journal of Agricultural Extension	1	Nigeria	Yes
Journal of Agricultural Research and Development	1		No
Journal of Agriculture and Food Sciences	1		No

Journal	Articles	Author Affiliation	OA
Journal of Agriculture and Social Research (JASR)	1	Nigeria	Yes
Journal of Agriculture, Forestry and the Social Sciences	2		No
Journal of Applied Science and Technology	2		No
Journal of Applied Sciences and Environmental Management	1	Nigeria	Yes
Journal of Science and Technology (Ghana)	1		No
Nigerian Journal of Basic and Applied Sciences	2		No
Rwanda Journal	1		No
Water SA	2	South Africa x 2	Yes
Zoologist (The)	1		No
Total	48	Total OA articles	16

Google Scholar (http://scholar.google.com)
Google Scholar provides a search of scholarly literature across many disciplines and sources, including theses, books, abstracts and articles. The search and small sample give an indication of the spread of publishing sources and the proportion of articles available as OA.

Search strategy and results:
(fish OR fisheries) AND (uganda OR tanzania OR kenya OR nigeria OR botswana OR senegal) Any field PY=2010 Results= 13,000 Analyzing 10 in every 100 Total in sample = 100 (Not relevant = 10)
[A Google search of the above with no PY limit gives 75 million hits, restricting to PDF reduces it to 2 million]

Categorizing the provider of an OA article is not so straight forward as the definition of what is a publisher becomes more fuzzy.

Table A3: GoogleScholar search results

	Articles	OA	Type	Author Affiliation
Publishers and journal aggregators				
Commercial publishers	21	0	Journals	
AJOL	20		Journals	See AJOL search. No PY search
BioLine Int.	1	1	Journals	Uganda
BioOne	2	0	Journals	
Proquest	3	0	?	
National and International Organization websites	7	6	Journals and Grey	Tanzania, Nigeria, Rest

Author posted on websites	7	5	Journals and Grey	Problems with broken links, Authentication, Copyright
Repositories - University or Research Institute				
Africa	2	2	Journals and Grey	Botswana, Nigeria
Rest of world	7	7	Journals and Grey	43% African institutional affiliation
Repositories - Subject				
Aquatic Commons	1	1	Grey	Tanzania
Repec	1	1	Grey	Senegal
PubMedCentral	1	1	Journal	Europe
Professional Societies	1	1	Int. J. Commons	Zimbabwe, Malawi, Mozambique
OA Publishers				
jeb.co.in	1	1	Journal of Environ. Biol.	Nigeria, India
Maxwell Scientific Org.	1	1	Journals	Tanzania
Academicjournals.org	6	6	Journals	Nigeria
Medwell journals	1	1	Journals	Nigeria
Agrosciencejournal.com	1	1	Journals	Nigeria
Docsdrive.com	2	2	Journals	Nigeria
Wojast.com	1	1	Journals	Nigeria
Globaljournalseries.com	1	1	Journals	Nigeria
Friends Science Publishers	1	1	Journals	Nigeria
Science hub Scihub.org	1	1	Journals	Nigeria
TOTAL	90			

AVANO (www.ifremer.fr/avano/)
Provides access to 289,930 electronic resources about the marine and aquatic sciences from the OAI harvesting of 297 Open Archives and 2 commercial editors.
Search August 2011
ALL FIELDS (fish or fisheries) and (uganda or kenya or nigeria or botswana or senegal)
AND PY=2010
Gives 47 records

Table A4

DOAJ	18	University repositories	
PubMed Central	1	(Europe)	8
Bioline	3	(N.America)	4
WorldFish	1	Journals	6
OAI record only	6		

Articles from the journal Aquatic Living Resources were 19% of the results; Ifremer holds the copyright to this journal and hence can make it openly available even though it is technically not OA. However, looking at the full text showed that only one article was published in 2010.

REPEC
Search EconPapers http://econpapers.repec.org/ Sept.2011
(fish or fisheries) AND (2010) AND (uganda OR tanzania OR kenya OR nigeria OR botswana OR senegal)
33 documents matching - of which 13 are available full text

PubMed Central http://www.ncbi.nlm.nih.gov/pmc/
Search Sept. 2011
((fish OR fisheries) AND (uganda OR tanzania OR kenya OR nigeria OR botswana OR senegal)) AND 2010[Publication Date]
Results: 177 of which ALL are available full text

IAMSLIC Union List of Serials (http://library.csumb.edu/iamslic/unionlist/index.php)
Afriamslic African Union List of Marine and Aquatic Serials
(http://library.csumb.edu/iamslic/africa/unionlist/index.php)

In addition to providing access to large collections of library journals, the IAMSLIC Union List of Serials also includes 148 OA Serial titles in the marine and aquatic sciences, many of which would be categorized as grey literature

THE ROLE OF THE NATIONAL FISHERIES RESEARCH INSTITUTE (NaFIRRI) INFORMATION CENTRE IN DISSEMINATING INFORMATION TO RESEARCHERS AND EDUCATORS

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37th IAMSLIC Conference
Zanzibar, Tanzania, October 16-20, 2011

Abstract: Information plays a vital role in the day-to-day decision making of a country's organizations and policy makers. NaFIRRI Information Centre has played a major role in ensuring that scientists and researchers access relevant information to enable them produce quality research products. The paper discusses the role played by E-Board, a locally established network to increase access to information available within the information centre. NaFIRRI electronic board is a LAN based service that was devised to electronically facilitate information dissemination and communication within the institute. The paper looks at the different components of the E-board and the Aqualink program under the information section that was established to disseminate information on biodiversity conservation among school children and teachers. It discusses the success achieved by this program so far.

Keywords: information access, information dissemination, Electronic Board, Aqualink program, biodiversity conservation, aquatic sciences.

Introduction

Information plays a vital role in the day-to-day decision making process of a country's organization and policy makers. Research has shown that decision makers often adapt their decision strategies to the information environment (Payne, Bettman and Johnson, 1993). Information is needed at all levels and it is the foundation of effective planning and management as long as the information is used and disseminated. NaFIRRI Information Centre has played a major role in ensuring that scientists, technicians and other researchers from the region access relevant information to enable them produce quality research products for effective policy and decision making through its electronic information dissemination infrastructure.

The National Fisheries Resources Research Institute (NaFIRRI), formerly the East African Freshwater Fisheries Research Organization, was established in 1947 by the colonial government to investigate all freshwater fisheries resources in British East Africa. The mandate of NaFIRRI is to conduct basic and applied research of national and strategic importance in aquaculture, capture fisheries, water environment, socioeconomics and marketing, information communication management, and emerging issues in the fisheries sector.

NaFIRRI Information Centre was then established in 1947 to provide information to research scientists in the East African Region. The Centre has evolved from a small Library to a modern Information and Data Centre. It is divided into 6 sections: processing unit, handling information processing; general reference; the journals section; general books section; Africana; and Archives. The Centre also has an Information Communication and Outreach component, which is responsible for reaching out to the stakeholders by providing information and is responsible for all the ICT infrastructure of the institute.

Information available in the Centre dates from 1947 when it was established. The centre covers the following subjects: fish biology, ecology, invertebrates, fisheries management, environment, socioeconomics, fishes, water quality, aquaculture, agriculture (crops, soils), research information on lakes like Victoria, Albert, Edward, George, Kyoga, Nabugabo, Tanganyika, Rukwa, Chad, Malawi, River Nile, River Zambezi and many other satellite lakes in

Uganda. It also contains project reports and consultancy reports carried out by the institute in the area of fisheries, water environment, aquaculture and fisheries.

The Electronic Board
The Electronic Board, a locally designed network, was established in 2009 to enable researchers, technicians and support staff to have access to information from the Information Centre from their desks. NaFIRRI Electronic Board is a LAN based service that was devised to electronically ease internal information dissemination and internal communication flow within the institute. To use the Board, you navigate through it as you would do with any website. The E-Board has the following elements: bibliographic databases available in the information centre; publications from the section comprising of digitized papers (reprints); reports; work plans; project technical reports. It also has an internal interaction window for notices; memos; news; development programs; activity schedules, future plans, budget estimates and reports/presentation and other documented materials.

The E-Board also houses the stores database, a shared application covering requests of items from stores of the institute. In future, the E-Board will accommodate all the institutional data and reporting forms for staff to complete online. A suggestion box will be placed there for users to give comments.

Methodology Used/ Background of the Study
The study was carried out by NaFIRRI Information Centre staff with the main objective of assessing the impact and establishing the role of the Information Centre in disseminating information to scientists through library visits, use of the E-Board and the Aqualink outreach program, which targets school children and their teachers. This was done to enable the Information Centre to identify gaps in order to improve service delivery.

Design/Methodology/Approach
Data were collected for the study using questionnaires and interviews administered to researchers, technicians, support staff and teachers in the selected schools. User statistics for the years 2009-2011 were the main sources of information. Data tables with numbers indicating the visits of students and teachers to NaFIRRI were also analysed using the Excel program to establish the percentages. The study focused on 50 NaFIRRI staff members and 8 educators. Scientists were asked questions about the Information Centre, Electronic Board and the NaFIRRI website. The educators had questions about the Aqualink programs. Interviews were also conducted with key respondents who gave some useful information for the study.

Results
The findings from the study suggest the following: 95% of the scientists and technicians agreed to using the E-Board to access information and 76% said they were happy with the design of the E-Board because it has enabled them to access information research reports, bibliographies, reprint papers, and staff contacts internally while 24% said the design needed improvement. On the design of the E-Board all the respondents requested updating regularly with new information.

Asked whether the E-Board had satisfied their information needs, 75% said yes while 25% said not fully because they want more information loaded on to the Electronic Board, such as news events and information pinned on the notice boards. Their needs were satisfied because they are able to access reports, reprints, bibliographic data about publications available in the library, the museum database, full publications and could also requisition stores items from their desks. The E- Board acted as a backup for institute work plans, proposals and reports. On whether the E-Board could be effective in dissemination of information within the Institute, 85% of the respondents said yes. The main suggestion was that the Information Centre needed to add more information to the E-Board.

On what should be done to improve the E-Board, 155 of respondents suggested that it should be linked via Skype, Facebook or Twitter for more free exchange of information within NaFIRRI.

All respondents reported that they accessed the Information Centre. Asked how many times they accessed it, 40% said daily, 26% said twice a week, 12% once a week and 22% once a month. On whether the Centre provides the required information, 87% said yes while 100% of the respondents said that it had contributed positively to their research outputs.

The information sought most by the scientists was fisheries information, aquaculture, and scientific reports (40%), followed by journal articles (54%) with information about lakes and rivers, water environment, fisheries, Invertebrates molluscs, socioeconomics of the fishery. Three percent sought dissertations 3%; 1% used it to access the Internet; and 2% accessed newspapers for current awareness. The Internet is less used within the Centre because the scientists have access to it from their desks.

One hundred percent of the researchers acknowledged the contribution of the Information Centre to their research outputs by providing information/literature on water environment, fisheries, socioeconomics, aquaculture, scientific reports, baseline information, historical data, lakes, rivers, Information on research done by other scientists outside Uganda, and current awareness information from newspapers. It also includes provision of reference materials to enhance and promote research interests and dissemination of research results to end users is highly commendable.

Several suggestions were given on how the information centre can improve service delivery:

- Procure more computers for accessing digital information.
- Place more documents on the Electronic Board.
- Provide regular seminars on retrieval of scientific information from Wiley and AGORA databases.
- Subscribe to more online journals.
- Purchase more books.
- Purchase more newspapers like the Weekly Observer
- Provide access to e-resources 24 hours a day, either at hand or in the field.

In comparison with the Information Centre, the studies show that scientists preferred to use the E-Board to access information resources rather than the Information Centre because the E-Board was easy for them to access from their desks. Less time was spent having to seek information from the Centre than from the E-Board. The information accessed most on the E-Board was journals (reprints), books (reports), workplans and historical information and data.

Questions	Percentage
Access to the E-Board	95% of respondents use the E-board to access information
Structure of E-Board and design	76% said they were happy with the design while 24% said the design needed improvement
Satisfaction of information needs	75% said yes while 25% said not fully, they need more information loaded onto the Electronic Board
Effectiveness of the E-Board in disseminating information	85% of the respondents said yes while 15% said no, it should be improved.
How E-Board setup can be improved	Sensitization of staff, update regularly, 15% suggested it should be linked to Skype, Facebook and/or Twitter for more free exchange of information

Table 1. Summary of Results - E-Board.

Questions	Percentages
Access to the Information Centre	100% said yes
How often they access the Information Centre	26% twice a week, 40% daily, 22% once a month, 12% once a week.
Does the Information Centre provide the required information	87% said yes while 13% said they needed more information from the Information Centre.
Contribution to research outputs	100% of the respondents said the Centre had contributed positively to their research outputs.
Information sought most by the scientists	Fisheries, aquaculture, scientific reports 40%, journal articles (54%) about lakes, rivers, water environment, fisheries, invertebrates, molluscs, socioeconomics, dissertations (3%), Internet (1%), newspapers and magazines (2%).

Table 2. Results - Information Centre.

Challenges Faced With the E-Board

Starting the program was difficult because users wanted to see a running program before they could believe in it. The second challenge was that of hardware and disk space. The Institute has lots of information both current and historical information which the current disk space cannot handle. In future we must acquire more disk space.

Aqualink Program

The Aqualink program was established to disseminate information on biodiversity conservation to school children and teachers. It aimed at educating students through an international education program to encourage them to participate in international stewardship of aquatic resources, and to enhance public awareness of natural history and

aquatic conservation issues. It also aimed to link educators and students in Canada and East Africa (Uganda) using the Internet and mail so as to allow participants to gain a cross-cultural understanding and foster attitudes as global citizens.

Launched in February 2010, it has exposed the NaFIRRI planned conservation outreach program to schools in and around Jinja through sensitisation visits to discuss the project with school administrations. It has also attracted schools from other parts of Uganda that frequently visit to access biodiversity conservation information in the Institute's Information Centre.

Figure 1. Students accessing biodiversity information in the Information Centre

The program started with 8 schools with a total number of 1,570 students. The educators from NaFIRRI reviewed and repackaged biodiversity information in the form of lessons for students. The package included information on ecosystems, fish species introductions,

great lakes of East Africa, and experiments. They also prepared a joint work plan with the teachers of the selected schools. Ugandan students and educators are linked to their counterparts in Canada using Internet avenues like e-mail, Skype and Yahoo Messenger. Students are allowed to exchange experiences on their local aquatic ecosystems. The schools are sometimes hosted at NaFIRRI and students are given presentations on biodiversity information covering the status of Lake Victoria fisheries through time.

Achievements of the Program

By the end of September 2011, the number of students and pupils who came to receive biodiversity information had increased to 4,900 from the 1,570 in 2010. This shows that the program has been successful.

The students were guided through NaFIRRI facilities where they were able to gain information and knowledge about managing aquatic biodiversity (Aquarium Tanks). Consultative workshops were conducted with teachers to assess progress and discuss the sustainability of the project in their schools. A draft question and answer booklet has been developed to enable student and teachers read and understand more biodiversity information.

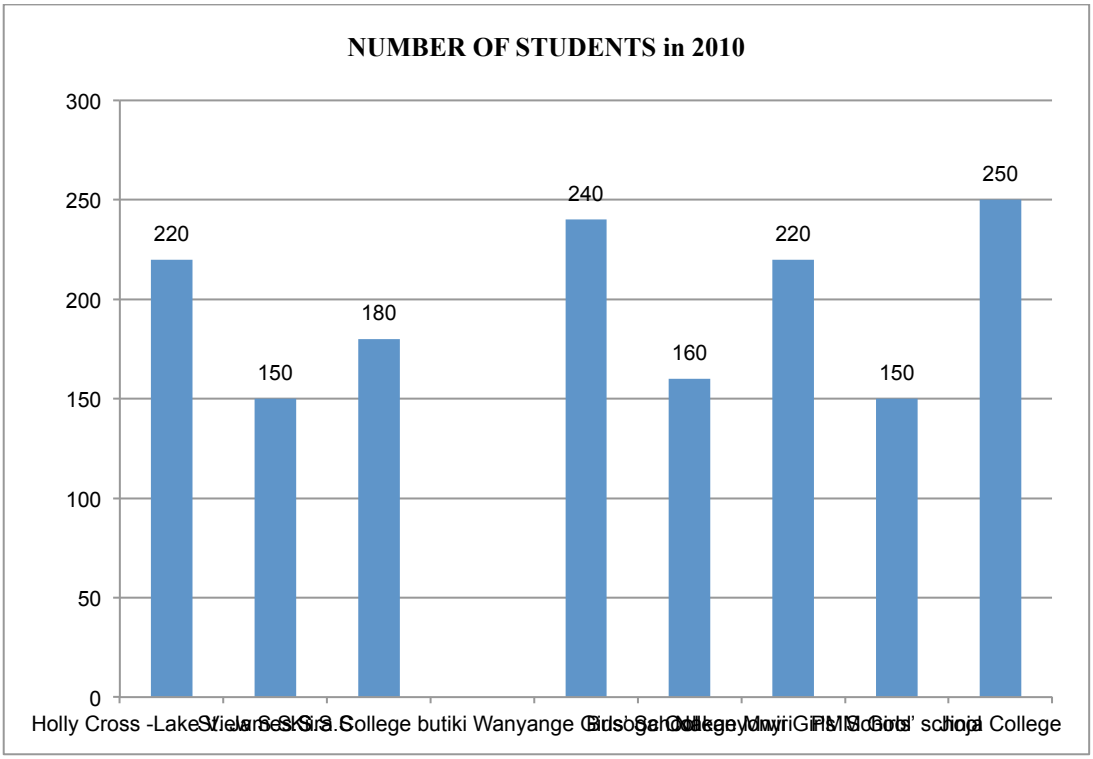

Table 3. Number of students in 2010.

SCHOOL	NUMBER OF STUDENTS	DATE VISITED
Holly Cross -Lake View S.S.S	220	03/07/2010
St. James S.S.S	150	05/07/2010
Kiira College butiki	180	14/07/2010
Wanyange Girls' School	240	15/07/2010
Busoga College Mwiri	160	17/07/2010
Nakanyonyi Girls' School	220	10/07/2010
PMM Girls' school	150	09/07/2010
Jinja College	250	09/07/2010
Total	**1570**	

Table 4. Chart showing the number of students from the 8 schools the program started with in 2010.

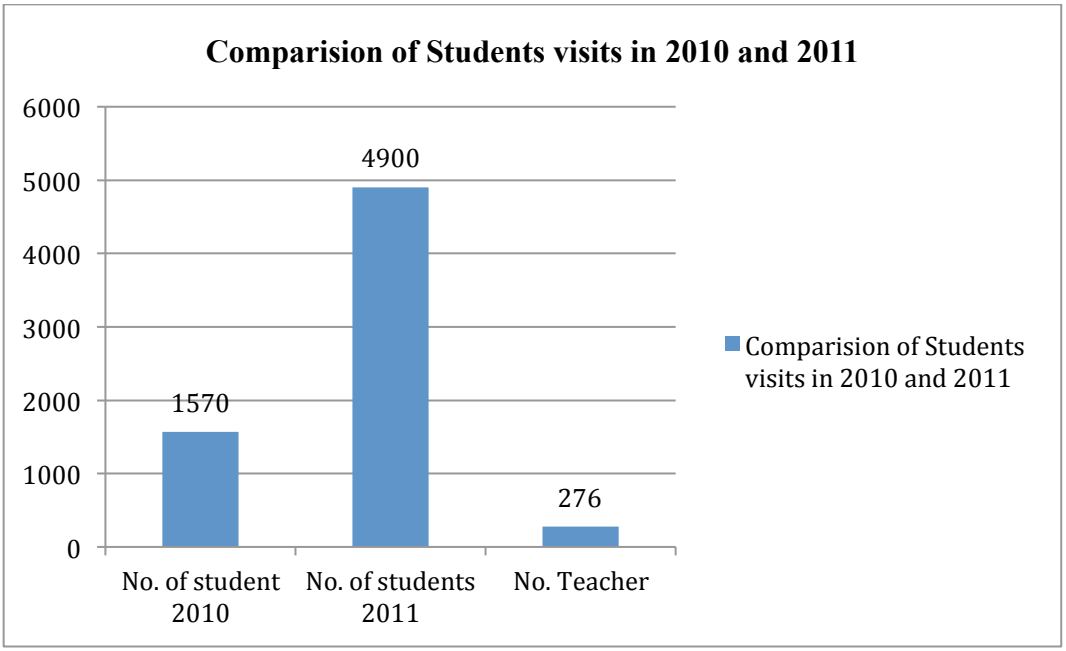

Table 5. Comparison of student visits in 2010 and 2011.

Figure 2. Interacting with students in one of the information dissemination sessions.

Aqualink Program Challenges

The main challenge has been of funding, since the schools need to be visited weekly by the dissemination team. The second members of the dissemination team are few and are engaged in several activities with limited time available.

Conclusions

The E-Board is effective in information dissemination though it requires regular updating with different information resources in order to meet the daily information needs of the users. Its advantage is that it can be accessed from one's desk, but it is still constrained by failure to upload regular updates.

Recommendations

The respondents recommend regular updating of information by introducing an enhanced method of collecting information from the scientists and making sure whenever information is collected it is loaded without delay.

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THE IMPORTANCE OF MEDIATION AND DISSEMINATION OF KNOWLEDGE IN OCEANOGRAPHIC AND MARINE LIBRARIES

Assane Fall
Mauritanian Institute for Oceanographic Research and Fisheries
Mauritania

37th IAMSLIC Conference
Zanzibar, Tanzania, October 16-20, 2011

Marine ecosystems are the subject of many scientific and political concerns. Many human activities threaten environmental and fishery resources and have consequences on biodiversity. These include overexploitation, pollution, and global warming. Fish as sources of food and income for millions of people around the world are declining. Librarians in marine science have an essential role to play in the mediation of knowledge about conservation of resources and ecosystems. The librarian should not be satisfied only with the collection, processing and dissemination of information. There is a role more important than ever in publicizing scientific knowledge so that local populations can better understand the functioning of ecosystems and contribute to protecting the environment. Various solutions can be envisaged. The aim of this paper is firstly to explain the project of the popular science library IMROP (Mauritania) by proposing a few tracks that both value the library profession, but also raise awareness among local populations of the need to conserve marine ecosystems.

MARKETING STRATEGY OF MARINE INFORMATION MANAGERS (LIBRARIANS) IN THE ODINAFRICA PROJECT

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7th IAMSLIC Conference
Zanzibar, Tanzania, October 16-20, 2011

The Ocean Data and Information Network for Africa (ODINAFRICA) project brings together more than 40 marine related institutions from twenty-five countries in Africa. The earlier phases of ODINAFRICA enabled the participating member states to get access to data available in other data centers worldwide, develop skills for manipulation of data and preparation of data and information products, and create infrastructure for archiving, analysis and dissemination of the data and information products. The current phase of ODINAFRICA-IV (2009– 2013) will focus on strengthening the Pan-African network of National Oceanographic Data and Information Centres – NODCs - and marine related institutions as a sustained mechanism for the application of data, information and products for marine and coastal management in Africa). Many tools have been created and training has been organized for marine information managers, but those resources are poorly known to scientists in different countries. Marine information managers must arm themselves with marketing strategy tools that serve to inform and educate policy makers and scientists on how to use these resources. This communication aims first to present the different tools and services developed through the ODINAFRICA and to present some marketing strategies.

AGRI-OCEAN DSPACE: FAO AND UNESCO-IOC/IODE COMBINE EFFORTS IN THEIR SUPPORT OF OPEN ACCESS

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7th IAMSLIC Conference
Zanzibar, Tanzania, October 16-20, 2011

Abstract: The United Nations agencies of FAO and UNESCO-IOC/IODE have created in a joint initiative a customized version of DSpace using standards and controlled vocabularies in oceanography, marine science, food, agriculture, development, fisheries, forestry, natural resources and related sciences.[1]

Keywords: United Nations, oceanography, marine science, food, agriculture, fisheries, forestry, natural resources.

The collaboration between FAO and UNESCO-IOC/IODE has the following goals:

- Promoting open access to scientific information on the topics of food, agriculture, development, fisheries, forestry, natural resources and related sciences for FAO and oceanography and marine sciences for UNESCO-IOC/IODE.
- Ensuring the metadata quality of repositories and the use of thesauri and other forms of authority control.
- Contributing to the development of sustainable repositories by the use of tools to make scientific publications (and later data) more accessible and visible.
- Removing access barriers by encouraging the creation of new service providers based on existing and mature metadata and semantics technology.

AgriOcean DSpace is based on OceanDocs, a customization of DSpace. It integrates the alternative document- type-based submission module developed in Dspace 1.4.2 . This version already supported a more refined metadata and integrated the ASFA Thesaurus in the submission module. Other features were a batch import module on browser level for RIS and Bibtex files.

These developments have been ported to DSpace, version 1.7. It uses new features, in the first place the authority control, statistics and harvesting modules.

The developments of FAO on AGRIS AP and thesaurus integration do complete AgriOcean DSpace. Finally an easy-to-install Windows-based version of AgriOcean DSpace is available since August 15 2011.

1. Historical background

The OceanDocs Network

OceanDocs started in 2004 as a project in the framework of OdinAfrica. In 2007 the OdinPubAfrica repository became OceanDocs, a repository for the IODE-related communities. Also some of the IODE partners were interested in setting-up their own repository. OceanDocs is now the repository network of UNESCO/IOC-IODE.[2]

[1] http://aims.fao.org/tools/agriocean-dspace

[2] M. Goovaerts, OCEANDOCS and Open Science Directory: two facets of the information policy of UNESCO/IOC-IODE, IAMSLIC Conference Proceedings 2009, http://hdl.handle.net/1912/3777, p. 1-8.

Fig. 1. From OdinPubAfrica to AgriOcean Dspace: Website in evolution (2004-2011).

The OceanDocs Network has now about 50 members. The OceanDocs[3] repository includes more than 40 institutes from Africa and Latin America (3,654 docs). The new partners GEOHAB (Global Ecology and Oceanography of Harmful Algal Blooms) and ASCLME (Agulhas and Somali Current Large Marine Ecosystem) will start to submit their publications in the near future.

The Institute of Biology of the Southern Seas (IBSS – Sevastopol, Ukraine) started their repository in 2007 which is based on the OceanDocs implementation. Their participation in the software development was critical for the finalization of AgriOcean Dspace. The collection contains now 1830 documents[4]. IBSS is also responsible for the CEEMAR repository of OdinECET, containing 964 publications[5].

ODINPimris and the National Institute of Oceanography(GOA, India) have created their repository using other software. ODINPimris uses Greenstone, while NIO uses a standard Dspace.

The OceanDocs network is set-up to support ODIN's (Ocean Data and Information Network) of IODE[6] with the development of repositories and has the following goals:

- Facilitate publishing of research findings by scientists (e-journal as well as e-archive) thereby promoting the related research and increasing access by scientists to the international research forum, specifically for oceanography, marine and related sciences
- Make scientific publications in the field of marine science and oceanography more easily and freely accessible
- Enhance the internal scientific communication
- Use of common standards

[3] http://www.oceandocs.net
[4] http://repository.ibss.org.ua/dspace
[5] http://www.ceemar.org
[6] http://www.iode.org

Other projects are now getting linked to OceanDocs. Afrilib, the federated catalogue of OdinAfrica, will use OAI-compatible software, including AgriOcean Dspace, making it possible to exchange metadata between the local OdinAfrica partners, the Afrilib catalogue and the OceanDocs repository. The pilot project to archive data sets, Published Ocean Data, is the result of a cooperation between SCOR, MBLWHOI and IODE, and is evaluating the possibility to use AgriOcean Dspace too.

FAO and Dspace:

FAO is since 2008 interested in DSpace as a tool for AGRIS centres. They were looking for software to share information in a standardized manner, using more sophisticated and specialized metadata, a common semantics and interoperable syntaxes. The use of AGRIS AP as a metadata standard and the integration of AGROVOC as a controlled vocabulary were other requirements of FAO.

Based on version 1.5, Prof. dr. ARD Prasad of the Indian Statistical Institute (Bangalore, India) created Agris Dspace for FAO. He adapted the submission module to create richer metadata, adding for example the language option to a field. Agris AP was supported in the OAI-PMH module.[7]

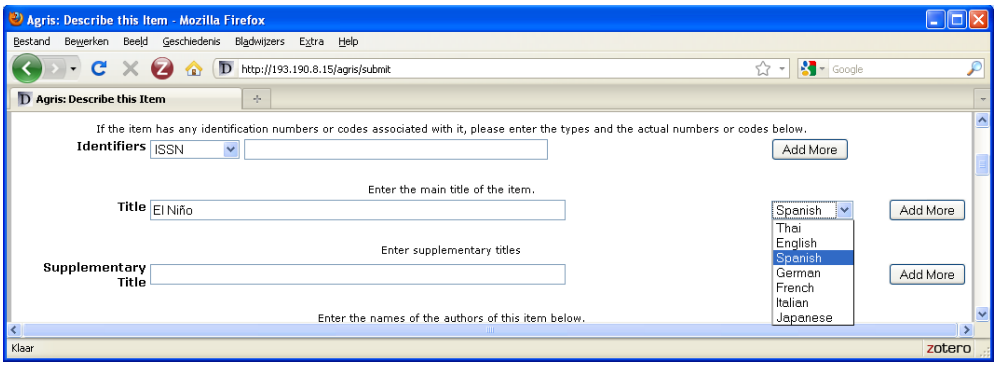

*Fig. 2. The submission module of Agris D*space.

Kasetsart University, Bangkok (Thailand) has also developed a plug-in for the use of AGROVOC in Dspace 1.5.2. This beta-version has not been upgraded to the later versions of Dspace.

Cooperation between FAO and UNESCO-IOC/IODE

The communities supported by the United Nations agencies FAO and UNESCO-IOC/IODE are synergistic (Agris, ASFA and ODIN) and the standards on metadata (Agris AP) and controlled vocabularies (Agrovoc or ASFA thesaurus) are similar for both.

A common repository development is a logical result. Hasselt University Library has created for FAO and UNESCO-IOC/IODE a new version called AgriOcean DSpace which is available since 1 August 2011. It integrates the previous developments of both agencies in one customized version of DSpace.

2. AgriOcean DSpace: the best of both world

Release of AgriOcean DSpace 1.0

AgriOcean DSpace 1.0 was released mid August 2011 and is now available in source code at Google Code[8] with the option to customize the lay-out and adapt the configuration file to local requirements. For partners with limited IT support, a Windows-based easy-to-install version is available.

The system is based on a a type-based submission module and includes the possibility to enter more refined metadata, define the language on field level and use the DSpace authority control system for journals and the ASFA

[7] http://www.dspace.org/images/Training_Materials/AGRIS%20AP%20add-on%20for%20DSpace.pdf
[8] http://code.google.com/p/agriocean/

and AGROVOC ontologies. AgriOcean DSpace focuses on Agris AP and MODS (OAI-PMH compliant), which are the most relevant formats for the communities involved.

Fig. 3: The home page of AgriOcean Dspace.

The Enhanced Submission Module

In Dspace the interface of the submission module has only a limited range of options. These are defined by the 'initial questions': Published or not, more than one title and more than one attachment.

From experience, users need a more structured approach. Therefore, OceanDocs already included a type-based submission module. This module has been refined for AgriOcean Dspace and a new definition table has been created: input-forms-extended.xml.

```
<collection-type>
    <collection handle="default">
        <type name="Journal Contribution" />
        <type name="Book"/>
        <type name="Book Section" />
        <type name="Proceedings Paper" />
            …
        <type name="Working Paper" />
        <type name="Map" />
        <type name="Data Set" />
        <type name="Other"  />
    </collection>
 </collection-type>
```

Fig. 4 Definition of type templates in input-forms-extended.xml

In the input-form-extended.xml file the different types are defined (see fig. 4) and for every type a different template can be created.

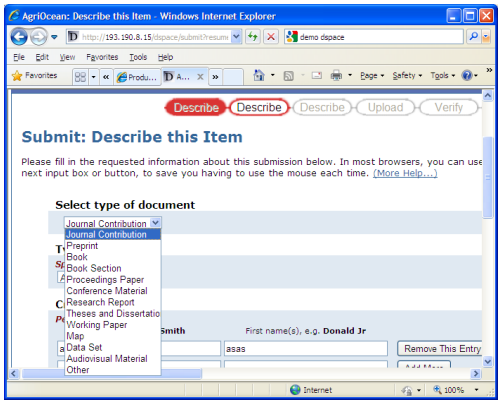

Fig. 5 Options in the submit module to select a template by type.

In AgriOcean Dspace, after choosing a collection, you can immediately start describing the document. If you need another template you can switch by selecting another type. A default type can be defined in the input-forms-extended file. Here it is ‘Journal contribution’.

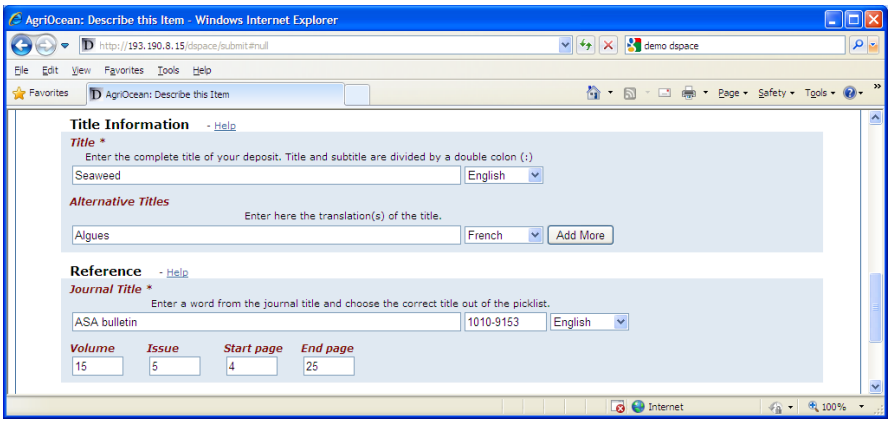

Fig. 6. Layout options in AgriOcean Dspace.

AgriOcean Dspace has included extra lay-out options compared to standard Dspace: grouping of fields (in a row and a block), defining field size and adding a language option for a field.

```
    <fieldgroup>
        <fieldrow>
            ....
        </fieldrow>
        <fieldrow>
            <field>
                <dc-schema>dc</dc-schema>
                <dc-element>bibliographicCitation</dc-
element>
                <dc-qualifier>volume</dc-qualifier>
                <label>Volume</label>
                <input-type size="4">onebox</input-type>
                <repeatable>false</repeatable>
                <required></required>
            </field>
            ...
            <field>
                <dc-schema>dc</dc-schema>
                <dc-element>bibliographicCitation</dc-
element>
                <dc-qualifier>endpage</dc-qualifier>
                <label>End page</label>
                <input-type size="4">onebox</input-type>
                <repeatable>false</repeatable>
                <required></required>
            </field>
        </fieldrow>
    </fieldgroup>
```

Fig. 7. Layout options defined in input-forms-extended.xml

The authority control of Dspace 1.7 has also been enhanced. The link between field and authority list is now defined in input-forms-extended (see Fig. 8). This way for every different type template a different authority list could be defined even on the same Dublin Core element.

```
<authority closed="true" editable="true" presentation="suggest"
limit="50">issn</authority>
```

Fig. 8. Use of authority control defined in input-forms-extended.xml.

For the journal titles, AgriOcean Dspace uses a table containing 37.000 titles. The ISSN is used as the authority code, which is also copied to the dc.identifier.issn field. Still it is possible to enter manually a missing title with its ISSN. Finally, the title, volume, issue, start and end page are kept in the database as separate values, but they are also concatenated to the dc.identifier.citation element. This has two advantages. AgriOcean Dspace keeps a very refined metadata, while the formatting of dc.idenfier.citation is standardized.

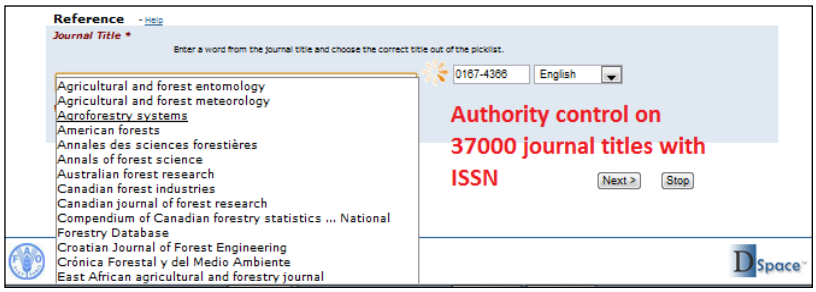

Fig. 9 Authority control for Journal titles and ISSN.

The authority control system is used for the ASFA and AGROVOC keywords too. This authority control system gives only the opportunity to search through an alphabetic list of keywords using autosuggestion search options.

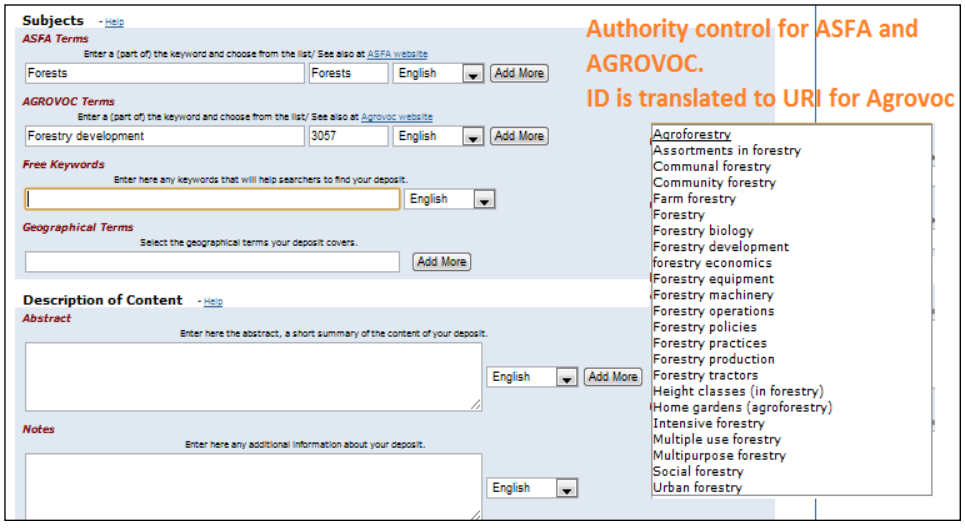

Fig. 10 Authority control for ASFA and AGROVOC.

The integration of a thesaurus and ontology system will be based on the work of Kasetsart University on Dspace 1.5.2. It will be integrated in the next version of AgriOcean Dspace.

Finally, the layout and authority control elements developed for the submission module are also used in the Edit interface of AgriOcean Dspace (See Fig. 11).

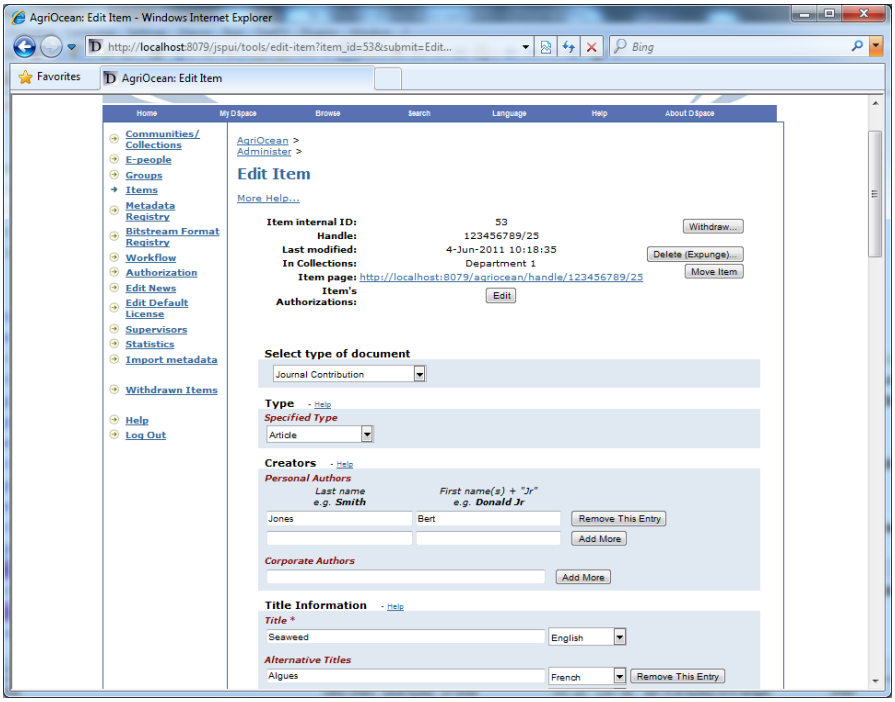

Fig. 11. Edit mode of AgriOcean Dspace.

Refinement of the OAI-PMH Output in AgriOcean Dspace

A main goal of AgriOcean Dspace is to create refined metadata and use richer standards like Agris AP and MODS.

The standard metadata format of Dspace is Qualified Dublin Core. Elements and qualifiers can be defined. It is also possible to create other formats, but because of the internal structure of Dspace, it will always be limited to a two level approach: element and qualifier. It has the advantage that it is easy to create new elements and qualifiers even out of the Dublin Core range. This is in not a problem since it is in fact only a wayof structuring internally the metadata.

The main problem is how this internal structure is translated to the external world. In the first place how the metadata is exposed through the OAI-PMH protocol. The crosswalk system of Dspace is in that way very efficient, still it has its limitations (see further).

AgriOcean Dspace starts with very specific metadata fields. Extra elements were created when the the necessary granularity is missing: e.g. dc.bibliographicCitation.volume, dc.bibliographicCitation.issue, dc.bibliographicCitation.stpage, dc.bibliographicCitation.endpage. Basic elements like dc.identifier.citation are recreated through concatenation of these fields.

Through the system of crosswalks the output of Dublin Core and Qualified Dublin Core can easily be managed. AgriOcean Dspace enhances the crosswalk functionalities to support Agris AP and MODS fully.

Dspace collects values that are not defined in element and qualifier, like the language and the authority ID. These values could not be translated to a metadata format in the existing OAI-PMH module. Therefore the crosswalk system was rewritten.

First, It is now possible to define the concatenation of fields (which are not repeatable).

Example in MODS crosswalk:

dc.bibliographicCitation.conferencename = <name type="conference"><role><roleTerm type="text">conference</roleTerm></role><namepart>**%s. $dc.bibliographicCitation.conferenceplace|s$, $dc.bibliographicCitation.conferencedate|s$** </namepart></name>

Result in OAI-PMH, combining the elements conference name, place and date:

```
< name type="conference ">
    <role><roleTerm type="text">conference</roleTerm></role>
      < namepart >5th IAMSLIC Conference. Paris, 25 June 1999</ namepart >
</ name >
```

Figure 12. Concantenation of fields.

Secondly, the values language and authority can now also be translated.

Example in MODS crosswalk:

dc.subject.asfa = <subject authority="ASFAT" xml:lang="**%l**" URI="**%a**">%s</subject>

Result in OAI-PMH:

```
<subject authority="AGROVOC" xml:lang="en"
        URI="http://aims.fao.org/aos/agrovoc/c_2925">
      <topic>Fish meal</topic>
</subject>
```

Figure 13. Translation of values language and authority.

Thirdly, The xml tags are grouped. In Agris AP and MODS, deeper levels of XML are sometimes required. Therefore subtags are grouped under the tags of the higher level.

Example in AGRIS AP crosswalk:

```
dc.subject.asfa = <dc:subject><ags:subjectThesaurus scheme="ags:ASFAT"
    xml:lang="%l">%s</ags:subjectThesaurus></dc:subject>
dc.subject.agrovoc = <dc:subject><ags:subjectThesaurus scheme="ags:AGROVOC"
    xml:lang="%l">%s</ags:subjectThesaurus></dc:subject>
dc.subject.agrovoc-uri = <dc:subject><ags:subjectThesaurus
    scheme="ags:AGROVOC">%s</ags:subjectThesaurus></dc:subject>
```

Result in OAI-PMH:

```
<dc:subject>
  <ags:subjectThesaurus scheme="ags:ASFAT" xml:lang="en">Accumulation</ags:subjectThesaurus>
  <ags:subjectThesaurus scheme="ags:ASFAT" xml:lang="en">Fish meal</ags:subjectThesaurus>
  <ags:subjectThesaurus scheme="ags:ASFAT" xml:lang="en">Wastes</ags:subjectThesaurus>
  <ags:subjectThesaurus scheme="ags:ASFAT" xml:lang="en">Water masses</ags:subjectThesaurus>
  <ags:subjectThesaurus scheme="ags:AGROVOC" xml:lang="en">Fish meal</ags:subjectThesaurus>
  <ags:subjectThesaurus scheme="ags:AGROVOC" xml:lang="en">Wastes</ags:subjectThesaurus>
  <ags:subjectThesaurus
      scheme="ags:AGROVOC">http://aims.fao.org/aos/agrovoc/c_2925</ags:subjectThesaurus>
  <ags:subjectThesaurus
      scheme="ags:AGROVOC">http://aims.fao.org/aos/agrovoc/c_8307</ags:subjectThesaurus>
</dc:subject>
```

Figure 15. Grouping of xml tags.

But grouping can be turned off. At the end of the translation line the level of ungrouping is defined in Figure 16, below.

Example in MODS crosswalk:

```
dc.contributor.author= <name  type="personal">
      <role><roleTerm type="text">author</roleTerm></role>
      <namePart>%s</namePart></name> | name
```

Result in OAI-PMH:

```
<name type="personal">
   <role>
      <roleTerm type="text">author</roleTerm>
   </role>
   <namePart>Said, T.O.</namePart>
 </name>
<name type="personal">
   <role>
       <roleTerm type="text">author</roleTerm>
    </role>
     <namePart>Hamed, M.A.</namePart>
  </name>
```

Figure 16. Level of ungrouping.

The combination of granular internal metadata and a refined crosswalk system results in high metadata quality as can be seen in OceanDocs: For agris at http://www.oceandocs.org/odin-oai/request?verb=ListRecords&metadataPrefix=agris&set=hdl_1834_104, for mods at http://www.oceandocs.org/odin-oai/request?verb=ListRecords&metadataPrefix=mods&set=hdl_1834_104.

High quality metadata is not a goal in itself. It makes extra services possible if communities stick to the high quality metadata, which is proved by projects like VOA3R[9].

[9] http://voa3r.eu/ - http://voa3r.cc.uah.es

Easy-to-install Version.
The Easy-to-install version was created to make AgriOcean Dspace available for smaller organizations with limited IT support. It is already distributed in OdinAfrica and will be tested in the Agris network.

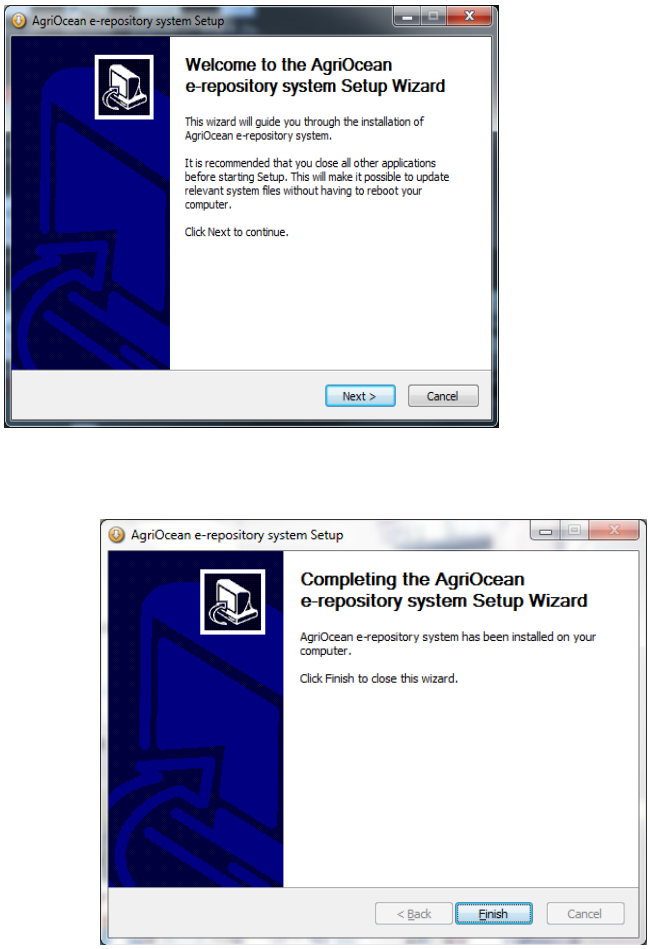

Fig. 17. The AgriOcean Easy Installer (10 min between both screenshots).

The package contains a builded AgriOcean Dspace and Postgresql. After installing Tomcat users simply have to define the main configuration elements of Dspace and Postgres during a set up procedure that takes about 15 minutes. The set-up procedure has been thoroughly tested for Windows Vista and 7, while a beta Windows XP version is also available[10]. The installer is created with the Open Source package 'SpringSource Tool Suite'.

3. Distribution and Support

AgriOcean Dspace is available at http://code.google.com/p/agriocean/downloads. FAO created an AgriOcean DSpace community on AIMS, Agricultural Information Management Standards: http://aims.fao.org/community/group/agriocean-dspace

AIMS[11] (Agricultural Information Management Standards) is a web portal managed by FAO of the United Nations that disseminates standards and good practices in information management to support the right to food, sustainable agriculture and rural development. AIMS supports the implementation of structured and linked information and knowledge by fostering a community of practice centered on the themes of interoperability, reusability and

[10]: http://code.google.com/p/agriocean/downloads/detail?name=1_installation_agriocean-dSpace-1_0-3.pdf
[11] http://aims.fao.org/

cooperation. It shares vocabularies, methodologies, tools and services in order to promote coherence in agricultural information.

On AIMS under 'Tools' a special section is dedicated to AgriOcean DSpace[12] containing background information, support material and the AgriOcean Dspace community pages. The community is set-up for all institutions that would like to install AgriOcean DSpace or are interested in the repository software. On its forum the AgriOcean DSpace team provides assistance with installing and using AgriOcean DSpace, answers questions and communicates new developments and solved bugs.

UNESCO-IOC/IODE will create complementary courses on the OceanTeacher platform[13]

[12] http://aims.fao.org/tools/agriocean-dspace - http://aims.fao.org/community/group/agriocean-dspace
[13] http://classroom.oceanteacher.org/

4. Future Developments of AgriOcean Dspace.

The batch import functionality will be available at the beginning of December 2011. It will then be possible to upload metadata files in Agris AP, Endnote and Zotero-RIS format .

Authority control will be extended to author names and the thesaurus/ontology plug-in will make it easier to manage ASFA, Agrovoc and even geographical descriptors. This will be included in the next release which is planned for August 2012.Next releases will keep in pace with the Dspace version available at that moment.

AgriOcean Dspace is part of the set of tools to be distributed among the VOA3R data providers for the implementation of document repositories. The possibilities of Linked Open Data (LOD) for AgriOcean Dspace will be explored.

OceanDocs and AgriOcean Dspace.

AgriOcean Dspace is already installed on the OceanDocs repository and partners like IBSS (Ukraine), CEEMAR (Eastern Europe) and KMFRI (Kenya).

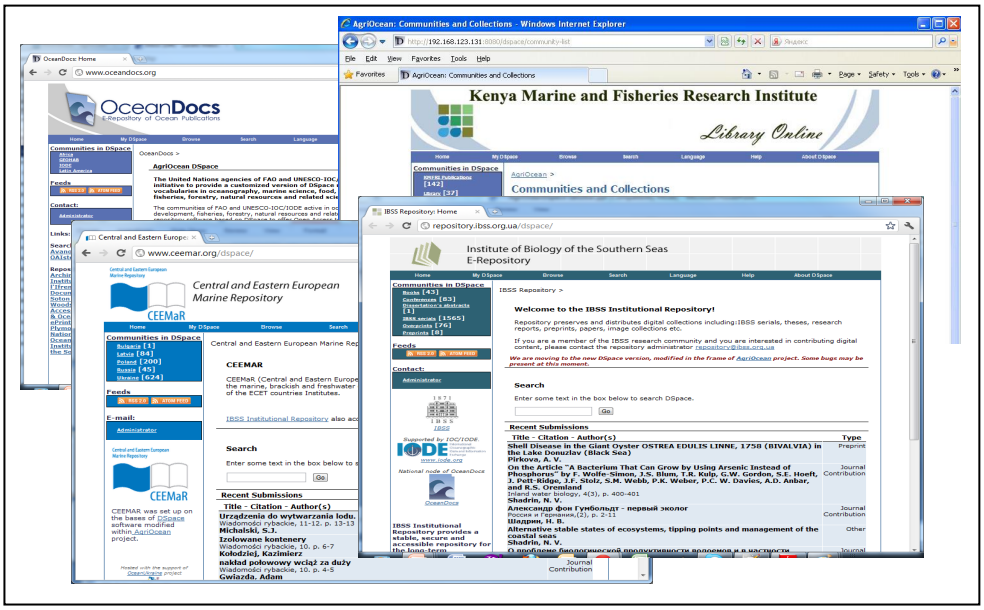

Fig. 13. Installations of AgriOcean Dspace.

IODE partners will have more options in developing their repository collection. They can still join the OceanDocs repository, but they can use now the software package available at the AgriOcean Google Code site. Organizations with limited IT capacity will opt for the Easy-to-install version, while others can use the source code to have a more customized repository.

The OceanDocs repository will harvest the IODE-related repositories. In the future, it will also be possible to harvest metadata and full text, creating a mirror of the local repositories, which not always have a stable environment. OceanDocs is already harvested by AVANO and will be by Agris of FAO.

VOA3R: VIRTUAL OPEN ACCESS AGRICULTURE & AQUACULTURE REPOSITORY: SHARING SCIENTIFIC AND SCHOLARLY RESEARCH RELATED TO AGRICULTURE, AQUACULTURE AND ENVIRONMENT

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Abstract: VOA3R is a 3-year European project launched in June 2010 and funded by the European Commission under the seventh framework ICT Policy Support Program. The general objective of the VOA3R project is to improve the spread of European agriculture and aquaculture research results by using an innovative approach to sharing open access research products. That will be achieved by carrying out innovative experiments with open access to scientific agriculture and aquaculture contents and by developing and providing services that integrates existing open access repositories and scholarly publication management systems by means of a federation approach. The technology used will itself become open source, so that the model of the service can be adopted by enterprises (including SMEs) or other kinds of institutions as a value-added, community-oriented model for open access content.[1]

Keywords: Open access, scholarly research, agriculture, aquaculture, information.

VOA3R: An Introduction

VOA3R is a 3-year European project launched in June 2010 and funded by the European Commission under the seventh framework ICT Policy Support Program. The ICT Policy Support Programme aims at stimulating innovation and competitiveness through wider uptake and best use of ICT by citizens, governments and businesses.

VOA3R started with 14 organizations from 10 European countries and 2 external organizations:

- University of Alcala, Spain
- Agricultural University of Athens, Greece
- Greek Research and Technology Network, Greece
- Technological Educational Institute of Athens, Greece
- University of Duisburg-Essen, Germany
- Swedish University of Agriculture Sciences, Sweden
- Hasselt University, Belgium
- International Center for Research in Organic Food Systems, Denmark
- French National Institute for Agricultural Research (INFRA), France
- Association de Coordination Technique Agricole, France
- ACTAInfo, France
- Czech University of Life Sciences, Czech Republic
- Agricultural Research Institute, Cyprus
- Consorzio Interuniversitario CINECA, Italy
- Food and Agriculture Organization of the United Nations (FAO)
- UNESCO-IOC/IODE

New partners will join during the project. VOA3R is also connected with the European projects OpenAire (http://www.openaire.eu/) and Driver (http://www.driver-repository.eu/) and with Eurocris (http://www.eurocris.org).

Under a strict open access policy, the VOA3R service will connect libraries, archives and other publication systems by providing advanced search interfaces that include the specifics aspects of research work (methods, variables, measures, instruments, techniques, etc.) that are specific of the particular domain. The users of the VOA3R service are academics and researchers but also students and practitioners who either want to search for or to publish

[1] http://voa3r.eu/

scientific research results (for these roles, learning material related to the application of scientific outcomes is also considered, as a sub-product of research). The project is targeted to the domain of Agriculture & Aquaculture, as it re-uses previous domain models for these domains, but the technology and models integrated are to a large extent transferable to other academic disciplines.

The VOA3R platform aims at reusing existing and mature metadata and semantics technology to deploy an advanced community-focused integrated service for the retrieval of relevant open content and data. It includes explicit models of the scholarly methods and procedures used and of the practical tasks targeted by applied research (a principal information need for practitioners). The service will enable researchers to formulate their information needs in terms of elements of the scientific methods established in their fields (variables, techniques, assessment methods, kinds of objects of interest, etc.) combined with topical descriptions as expressed in metadata. The community approach will enable the enhancement of information seeking with extended evaluation elements (such as ratings, public reviews, social tagging and links to supporting or conflicting reports) that complement and also go beyond the traditional, anonymous peer review process, in which results are not made available openly.

The major objectives of VOA3R are:

- Devising and providing a single access point to scholarly research in the area of agriculture, aquaculture and related sciences. The VOA3R platform integrates the existing open access repositories as well as digital libraries, sharing scientific and open access research related to agriculture, food, aquaculture and the environment. VOA3R is also dedicated to providing a community-oriented platform based on social networking, micro-blogging and social bookmarking.
- Analyzing and modeling research work processes, inputs and outcomes, and coming out with a detailed meta-model that will be the basis for new search and navigation interfaces that are specific to scholarly information needs.
- Analyzing existing and alternative approaches to the evaluation of scholarly research.
- Experimenting with alternatives to peer review in the context of open access repositories, based on the meta-models.
- Formalizing meta-models of research work, coming up with ontologies that enable new forms of search and browsing enhanced by existing semantic metadata repository tools.

Background: Open Access

A primary task of VOA3R is to create a portal for publications and related research output in Open Access on the topics of agriculture, aquaculture, environment and related sciences. Journals (see http://www.doaj.org/), conference proceedings and repositories are the most common forms of Open Access.

The repositories collect a variety of resources: published work (usually the author's final version), reports, presentations, maps, audiovisual materials, unpublished material, and research data. VOA3R will harvest repositories with the following targets:

Table 1: VOA3R Targets[2]	**Year 1**	**Year 2**	**Year 3**
Number of files available through Open Access	200.000	500.000	2.500.000
Number of Open Access Repositories integrated	4	8	10

Table 1. VOA3R Targets.

The content providers involved in the first phase and their corresponding systems are:

[2] VOA3R, Report on Content Integration/Population (Phase 1), 2011, p. 15. Unpublished.

Table 2: Partners and their repositories[3]	
CINECA	U-GOV system (www.u-gov.eu)
FAO	OA/Doc (www.fao.org/documents)
ICROFS	Organic Eprints (www.orgprints.org)
INRA	ProdINRA (www.prodinra.inra.fr/prodinra/pinra/index.xsp)
SLU	Epsilon repository (http://www.slu.se/en/library/publish/search-epsilon)
UHasselt	OceanDocs (www.oceandocs.net), IBSS Repository (http://repository.ibss.org.ua/dspace/) and CEEMAR (http://ceemar.org/dspace/)

Table 2. VOA3R Partners and Their Repositories

Other providers will be invited to join during the project.

Quality control is an essential part of the scientific publication cycle. Scientific journals have developed peer review to control the quality of the submitted articles. Universities and research institutes assess the scientific work of researchers by evaluating their publications, with the Web of Science as the main benchmark.

Publishing in repositories requires a new way of quality control. Articles in repositories generally did not go through peer review. At the same time, the Internet makes new forms of review and assessment possible. VOA3R is exploring these new forms and how they can be integrated **Communities of practice: The Internet - Social Networks - Web 2.0**
Interesting examples are:

- Linkedln, as a professional network [4]
- CiteULike[5] and Zotero,[6] bringing reference managers into a social bookmarking environment
- Mendeley,[7] a collaboration platform with bibliographic and other tools to support research
- MyExperiment,[8] a site to share research objects

VOA3R's ambition is to integrate the harvested content in a scientific social network, to bring the archive alive. Research is about working together, about sharing a joined passion and interest. The VOA3R platform focuses on identity, relationship, activity and collaboration. No matter how much software we build, people build the relationships, and they build them out of words first!
in its Open Access research platform.[9]

Stakeholders
A number of stakeholders has been defined: researchers, academics, practitioners, students, information managers, decision makers, the industry and other organizations; but also the anonymous web surfer and certainly other systems and services are involved. These stakeholders can act as producer and/or consumer. A scientific platform can offer to the producer different opportunities, from publishing research online, which should make research items more accessible, to an electronic CV. It can help to enrich the scholarly process by supporting the pre- and post-publishing phases, by creating a dialogue between stakeholders and by linking it in the research environment.

Consumers' needs are on the level of information retrieval and processing. They need tools to search the heterogeneous and Open Access content: browse options, timelines, simple and advanced search with semantic support, authors' backgrounds and other relevant resources and tools to work with the search results. These include bookmarks, comments, annotations, ratings, reading baskets, etc. to enhance interactivity.

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[3] VOA3R, Report on Content Integration/Population (Phase 1), 2011, p.16. Unpublished.
[4] http://www.linkedin.com
[5] http://www.citeulike.org
[6] http://www.zotero.org
[7] http://www.mendeley.com
[8] http://www.myexperiment.org
[9] VOA3R, Process models for scholarly publication Analysis of peer review mechanism, 2011. http://voa3r.eu/

The VOA3R Platform and Its Services[10]

The key objectives are to improve the spread of agricultural, aquacultural and environmental research results by using an innovative approach to sharing Open Access research products by integrating existing Open Access repositories and scholarly publication management systems. The main innovation is based on a community-focused integrated service and a social portal.

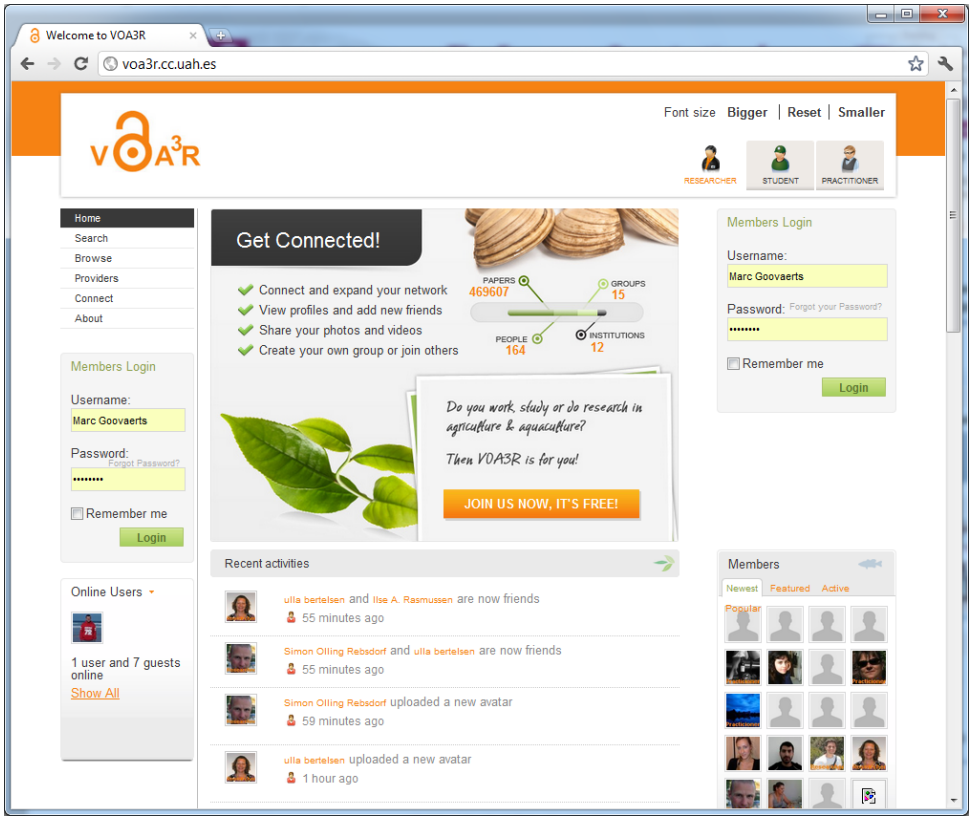

Figure 1. The beta version is available at: http://voa3r.cc.uah.es/.

Repository

After the first half of the project the VOA3R platform contains nearly 500.000 Open Access documents. VOA3R is on schedule.

[10] http://voa3r.cc.uah.es/

Table 3: Resources harvested in Phase 1 by VOA3R partners[11]		
CINECA	U-GOV system (www.u-gov.eu)	28
FAO	OA/Doc (www.fao.org/documents)	402.324
ICROFS	Organic Eprints (www.orgprints.org)	11.884
INRA	ProdINRA (www.prodinra.inra.fr/prodinra/pinra/index.xsp)	7.180
SLU	Epsilon repository (http://www.slu.se/en/library/publish/search-epsilon)	5.553
UHasselt	OceanDocs (www.oceandocs.net), IBSS Repository (http://repository.ibss.org.ua/dspace/) and CEEMAR (http://ceemar.org/dspace/)	6.407

Table 3. Resources harvested in Phase I by VOA3R partners.

Already the repositories of five new affiliated partners are being harvested:

Table 4: New affiliated partners: Resources harvested in Phase 1[12]		
Cemagref, France	Cem@Doc Portal	10.985
National Documentation Center / NHRF, Greece	National Documentation Center (EKT)	1.100
Agricultural Faculty of Cukurova University, Turkey	TrAgLor	794
Wageningen University, Netherlands	Wageningen University & Research Center Publications (WAY)	17.273
Ifremer, France	Archimer	8.210

Table 4. New Affiliated Partners: Resources Harvested in Phase 1.

[11] VOA3R, Report on Content Integration/Population (Phase 1), 2011, p. 14. Unpublished.
[12] VOA3R, Report on Content Integration/Population (Phase 1), 2011, p. 17. Unpublished.

VOA3R opt for high quality metadata. It has developed its own VOA3R application profile creating a richer metadata set based on Dublin Core, but other rich metadata standards like Agris AP and MODS are supported as well. Ontologies are used, in the first place AGROVOC. VOA3R is committed to exposing its contents as open linked data expressed in RDF.

The User Interface (*)
The VOA3R platform is in beta version. The actual functions will be enhanced based on pilot trials and user studies. Therefore the interface is not yet in its final form.

Search Options
The user can define his role, as a researcher, a student or a practitioner. Depending on the role, adapted tools are provided.

Different search options are available: tag based – text based – navigational - social – author. The tag-based option shows a tag cloud with a specific option for Agrovoc terms.

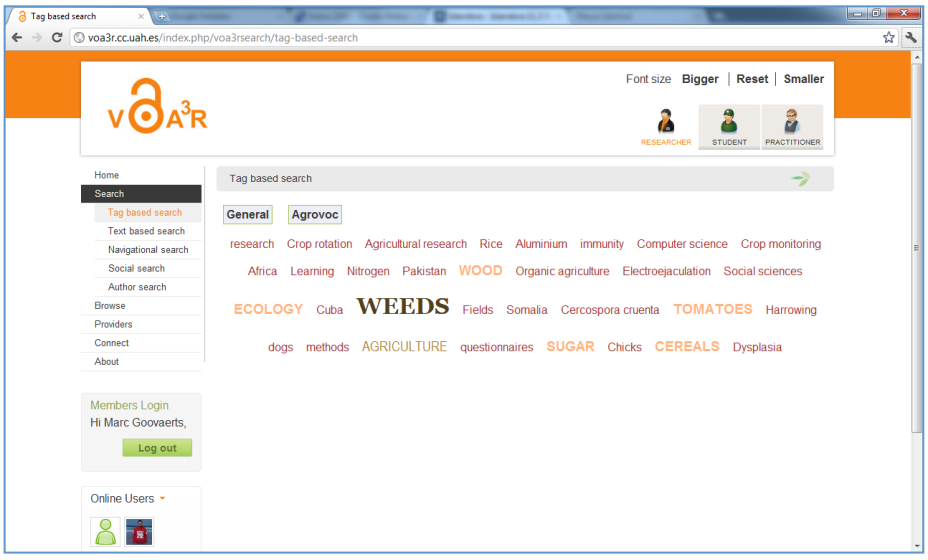

Fig 2. Tag-Based Search For Agrovoc Terms.

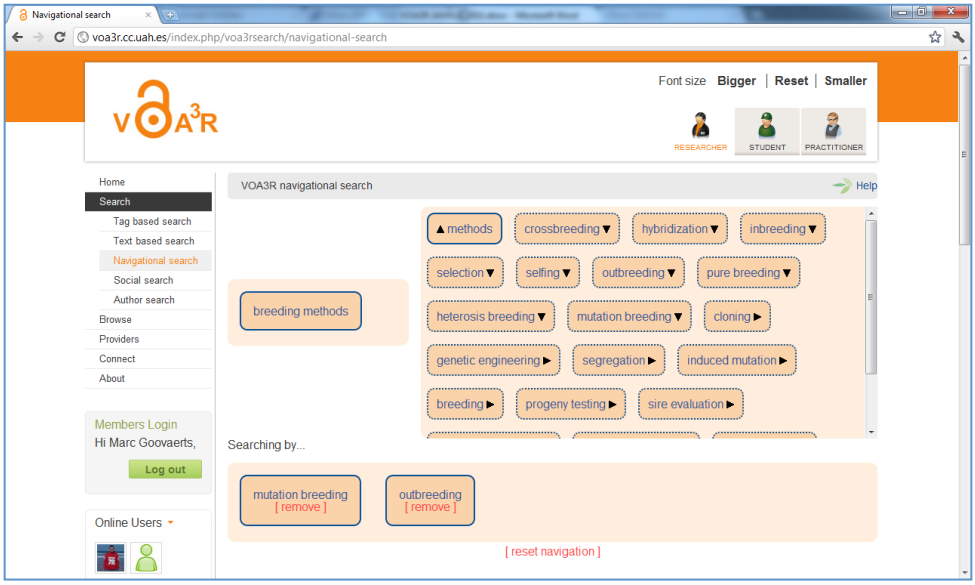

Figure 3. Navigational search.

Documents can be browsed on a timeline or a map view.

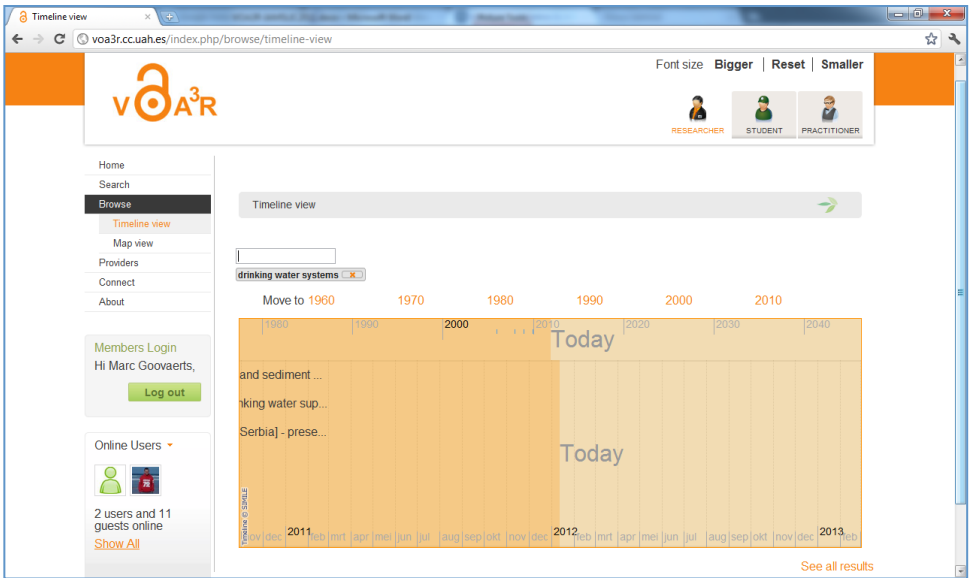

Figure 4. Timeline View.

The result of a search is the start of new activity. When logged in, the user has the option to promote, discuss or annotate the resource. He can give it a rating. Some related articles are presented at the bottom of the screen. He also can search in other Open Access databases for related articles. If he is the author of the article, he can claim the article.

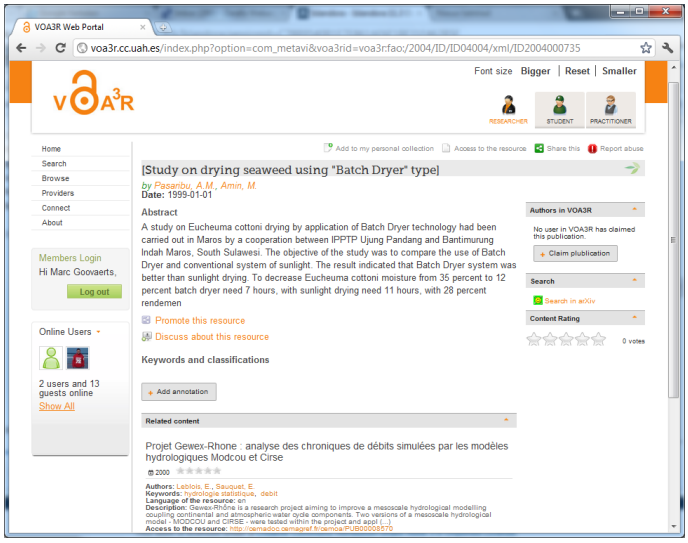

Figure 5. The Record and the User's Options.

Community Features

The development of a social component to the VOA3R platform creates many opportunities but it will be confronted with specific challenges. Mainly generalist social networks like Facebook and LinkedIn seems successful at the moment.

To be successful, VOA3R will need to create a critical mass of active users. A large part of the research community does not want to share their information in an open environment. The older generation has its network and communication tools.

Finally, a multitude of networking services are becoming available. Users have choices. They may have already profiles in Facebook, LinkedIn, Mendeley, CiteULike and others. The maintenance of all these profiles can be a problem.

The VOA3R platform is addressing these challenges and will deliver extra value to the users by offering the ability to integrate data from existing social networks and by presenting specific tools to support scientific communication besides classical tools like development of a profile, ratings, public reviews, suggestions, etc.

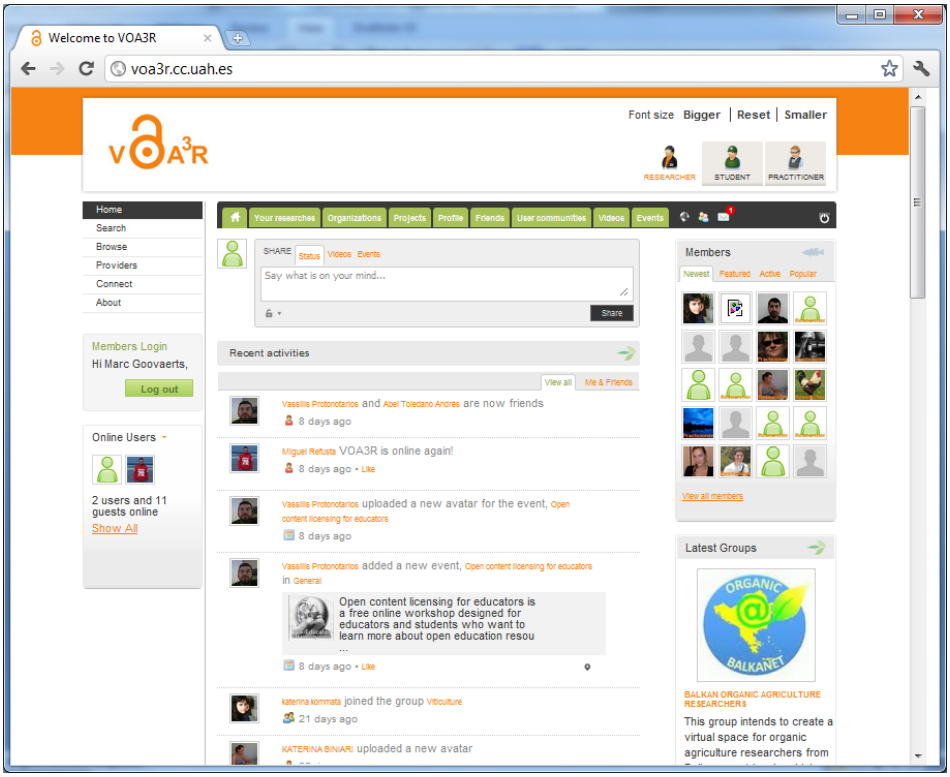

Figure 6. The Interface Of the Social Component Of the VOA3R Portal.

Figure7. The Different Research Or Practitioner Oriented Tools In the Platform Grouped By Tab.

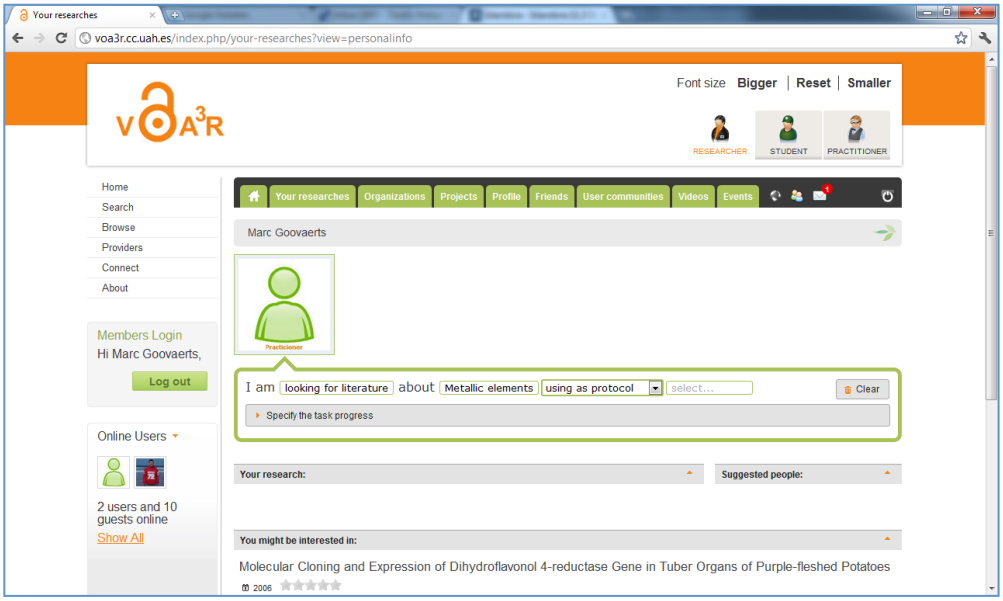

Figure 8. The workflow in the research can be defined and shared.

The beta version already includes the possibility of importing profile data from Mendeley. A researcher profile gives different possibilities for managing different aspects of the research, from one's own research to projects and communities. On that level the VOA3R platform becomes a fully-fledged research platform.

The content and community features are combined as described in the next scheme.

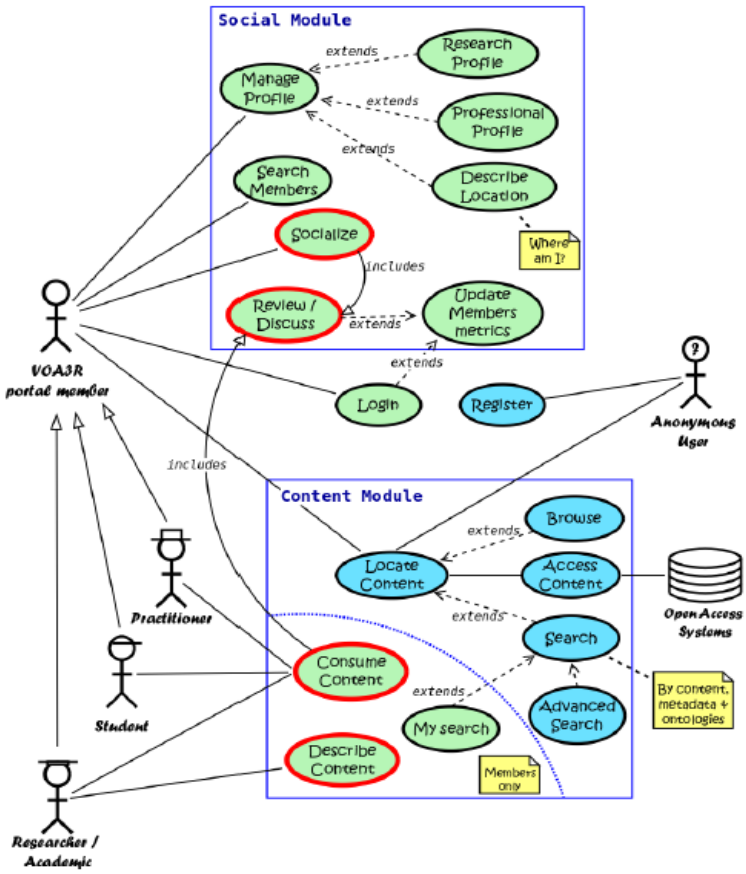

Figure 9. Content and community features.

Conclusions

The VOA3R project is now halfway developed as a European project. The main goal, the development of a web portal for the agricultural, aquacultural and environmental communities containing open content, has been realized on a technical level. The platform now exists as an embryonic community tool.

In the next eighteen months, new partners will be invited to submit content to the portal. They will find a project that:

- Creates new approaches to open access resources.
- Integrates these resources in a dynamic social network.
- Uses high-quality metadata standards, defining models to describe research methods and processes in a social environment.
- Experiments with alternative forms of quality control and assessment of publications.

ENHANCING ACCESS TO LOCAL BIODIVERSITY KNOLEDGE IN THE DELTA: EXPERIENCES OF THE OKAVANGO RESEARCH INSTITUTE LIBRARY

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7th IAMSLIC Conference
Zanzibar, Tanzania, October 16-20, 2011

Abstract: The Okavango Delta with its unique ecosystem has attracted its fair share of researchers from all corners of the world, resulting in the creation of a wealth of knowledge. Researchers, environmentalists and policy makers alike acknowledge that the preservation of this fragile ecosystem largely depends on the availability, accessibility and unimpeded flow of information in many formats. The biggest challenge, therefore, is how do we as information specialists/librarians gather this information from the various sources, especially the grey literature and unpublished technical reports, and make them accessible not only for planners and policy makers but for everyone. For a long time, the tendency has been to focus on the published scholarly reports and articles that can be accessed easily. Grey literature has often been relegated to the back burner, and as a result some of it has been lost. This paper looks at several initiatives (both local and international) in which the Okavango Institute Library and some of its partners are involved to enhance access to local biodiversity knowledge. The paper concludes by emphasizing the importance of sharing knowledge in the preservation of this unique ecosystem on which the people of the Delta depend for their livelihood.

Keywords: libraries, grey literature, Okavango Delta, biodiversity ecosystems, aquatic science.

Introduction

The preservation of our natural resources relies on the unrestricted and unimpeded flow of information. Access to this information is fundamental to understanding and coping with the challenges of climate change for example and over-exploitation of natural resources. However, most of this data is found in unconventional forms that are in the form of grey literature. Studies have shown that grey literature remains of the most important sources of knowledge about natural science research and management of our ecosystem (Thatje et al, 2007). This statement is supported by Schopfel (2010), who states that most scientific results are published in reports, working papers, technical notes and factsheets. It was in recognition of the importance of capturing and disseminating research that the Okavango Research Institute was formed to study the ecosystem of the Okavango Delta, and ensure that research findings are made available to communities and government policy makers to assist in decision making and formulating policies regarding the preservation of this ecosystem.

The Okavango Research Institute (former Harry Oppenheimer Okavango Research Centre) was established in 1994 with a mandate to advance scientific knowledge and promote sustainable natural resource management in the Okavango Delta and other Southern African wetlands, river basins, watersheds and the Kgalakgadi wetlands. It has five academic research units:

1. **Land and Water Unit Unit**: aims to enhance understanding of hydrological and biogeochemical processes and landform evolution. Its major initiatives are water quality monitoring and climate change modeling.
2. **Ecosystems Unit**: major initiatives are fish stock assessment, wildlife population dynamics and biodiversity conservation.
3. **Governance Unit**: focuses on environmental management and policy and planning, including trans-boundary water and land resources management and community based natural resources management governance.
4. **Livelihoods Unit**: focuses on research into natural resources use and sustainable livelihoods (including influences like HIV-AIDS and climate change) and how they affect human livelihoods.
5. **Tourism Unit**: studies the environmental, social and economic impacts of tourism, cultural tourism and heritage.

Through these various research activities, information is generated in various forms including grey literature, which takes the form of conference proceedings, technical reports, fact sheets, posters amongst others. So what is grey literature and why should it be given a priority in our library collections?

Several definitions of grey literature have been advanced. At the 6th International Conference on Grey Literature in 2004, it was defined as "that which is produced at all levels by Government, academia, business and industries, both in print and electronic formats but which is not controlled by commercial publishing interests and where publishing is not the primary activity of the organization." Moahi (1995) defined it as "material that is not commercially published and therefore not to be found in the normal channels associated with commercially published literature. Although the definitions might vary slightly, there is one common thread and that is that they do not emanate from mainstream publishing and therefore may not be available through usual channels (Alemma, 2001).

Given its unconventional format, grey literature considered an important source of information for the following reasons:

- Research results are often more detailed in reports. Published work on the other hand is often subject to restrictions such as limited word count (Schopfel, 2010).
- It can be produced relatively quickly and because of that it is often up to date.
- Grey literature is considered the first port of call when reporting important findings (Aina, 2000). An example is the Hydrology section in the Institute, which offers the most updated flood information in the country, and its results are not found elsewhere but on the ORI website.
- In most cases grey literature is distributed in these forms up to 12-18 months before being published elsewhere. In some instances, results are never published anywhere else.

Okoroma (2011), citing a research conducted by Aina (1992), demonstrates the vital importance that grey literature plays. In this paper, the author analyzed the development of literature produced in Botswana over a three year period. His results showed that grey literature constituted 98% of all the developmental literature in Southern Africa. The same researcher also carried out a study in Nigeria on the use of grey literature in agriculture. The study revealed that as much as 14% of grey literature was used for research in agriculture in that country.

However, although it is accepted or acknowledged that grey literature is an important source of information, it is difficult for librarians to find and collect because of its unconventional publication methods, most being conference proceedings, research findings and government documents (Boukacem-Zeghmouri 2006). Secondly, there is too much being generated, making it difficult to keep track, especially when one considers studies commissioned by governments, research reports of conferences etc. Because of poor bibliographic control, it is transient and sometimes its availability depends on where it is produced.

In light of this, ORI Library and its partners has come up with the following initiatives to ensure that grey literature is preserved and made accessible to the community at large:

University of Botswana Research, Innovation and Scholarship Archive (UBRISA)
According to Maahi (2009), the creation of UBRISA was closely tied to the University of Botswana's goal to become a research-intensive university by 2021, and its policy is to ensure that all research outcomes published should be deposited in this Institutional repository. Its objectives are:
- To promote and encourage dissemination of research results; and
- To preserve UB's intellectual heritage for the future.

Research output can be accessed on http://ubrisa.ub.bw:8080/xmlui.

Okavango Delta Information System (ODIS)
Information System (ODIS) is the web based geospatial information repository of the Okavango Research Institute and brings together geospatial/non geospatial scientific data, reports and maps. Established in 2005, one of its original objectives was to provide maps to people unfamiliar with GIS to support the planning and implementation processes of the Okavango Delta Management Plan (ODMP). ODIS houses much of the data and documentation generated to support the ODMP process. The "spatial search" function of ODIS produces a series of thumbnail images of the digital maps and reports available. The map viewer shows various maps with boundary maps of the

Okavango Delta as a RAMSAR site, veterinary cordon fences, Wildlife Management Areas, district boundaries, national parks boundaries, political constituencies and Controlled Hunting Areas; geoscientific information on geology and soils, archaeological information on sites and rock art, cultural information on languages, maps of gazetted settlements and villages and village survey results on several indicators. ODIS can be accessed at http://odis.orc.ub.bw/odis.

Because the Okavango Basin covers three states, namely Angola, Botswana and Namibia, access to water resources data is very important in trans-boundary waters shared by 2 or more states. According to Gerlak, Lautze, and Giordanol (2011), this helps diffuse "perceived conflict potential." This fact has been recognized by international bodies such as the 1997 United Nations Convention on the Law of Non-Navigational Uses of International Water Courses, which called for regular sharing of hydrologic and other environmental data and forecasts, information on planned measures and prior notification to countries that might be impacted by planned projects. These efforts have also been supported by Global Environmental Facility (GEF) International Water Programme, which sees data and information exchange as the first step to achieving cooperation and joint management of shared water. UNESCO also funds workshops with the objective of sharing available data on trans-boundary courses (Gerlak, Lautze, Giordano, 2011).

The Okavango-Cubango Knowledge for the River Group was created by one of ORI Library's partners, OKACOM. The group's aim is:

- To ensure that data, information and codified knowledge created and manipulated by these institutions are generated, documented, preserved, analyzed and shared to better inform and support decisions.
- To ensure access, capture, sharing and preservation of materials from key projects.
- To avoid duplication of work and ensure more effective reuse of existing information.
- To recommend standards for the description of collections of information to facilitate exchange.
- To share knowledge of other existing initiatives and new management tools.
- To encourage good practice in the management of operational information, including records and documentation of projects.
- To support the development of a strong community network of practice of knowledge management and information professionals in the region (https://groups.google.com/forum/knowledge-for-the-river**).**

Botswana Environmental Information System

Although local information systems are fairly recent developments, they are important in the sharing of local data and they provide depth and insight on subjects of interest. The EIS was established as a national data and information system for use in the management of the natural environment. The system contains a number of components including environmental indicators, state of the environment reviews as well as environmental assessment. Its provision of coherent and timely information on the Botswana environment helps in the development of management policies and strategies. The EIS also addresses the need for environmental data and information resources that can be used to evaluate the state of Botswana's environment. It is also a mechanism with which key environmental data are identified and information made widely available to various stakeholders http://www1.eis.gov.bw/EIS.

Aquatic Sciences and Fisheries Abstracts (ASFA)

Studies have shown that much of the knowledge and information produced by researchers will never appear in any form except grey literature. Databases like ASFA provide institutes with an opportunity to deposit this type of literature because of the recognition and increased value that they have awarded to grey resources and the improvement of their availability and dissemination. For a long time, reports, proceedings and other types of grey literature have been under-represented (Banks, 2006). The ORI library joined as a National ASFA partner in 2010 and through its monitoring of serial titles, the visibility of and access to grey literature have been enhanced. Ezema (2011) bemoans the fact that despite number of publications from Africa, most of them are not accessible outside the institutes in which they are published.

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CONTRIBUTION OF AFRICAN COUNTRIES TO THE DEVELOPMENT OF THE AQUATIC COMMONS REPOSITORY AND THE CHALLENGES IN SEARCHING FOR INFORMATION

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Abstract: The paper evaluates the contribution of African countries to the Aquatic Commons repository and highlights the problems encountered in searching for information in the system. Results showed that 82 agencies uploaded a total of 3,967 articles into the repository, but only 8 agencies or 9.8% of the total come from Africa. Those 8 contributed 596 entries or 15.4% of the total submissions to the repository. Nigeria alone contributed 81.5% of African contributions, or 12.6% of the total submissions. The total number of downloads as of July 2011 was 233,781, an increase of 154.8% when compared to June 2010. Nigeria downloaded 4.9% of the total and 69.5% of the total from African countries. The article suggests that the possible reasons for low level African participation are: ineptitude of African librarians and other stakeholders; lack of awareness of the project; lack of feedback mechanisms to participating agencies; and the language of the repository. Suggested ways to beef up African participation includes: identification of relevant agencies in the different countries; creating awareness among agencies; having a feedback mechanism for contributing institutions; and finding a way of accommodating actively the French speaking countries in Africa. The paper further evaluates problems in retrieving information on specific subjects and geographic areas. Results show that subject categorization used to describe the documents has lead to false drops in most searches, as the descriptors are not always accurate, and information on geographic areas is not precise. The paper recommends that since the Aquatic Commons is a growing collection, for ease of retrieving information a thesaurus must be used to describe the articles; otherwise it will be difficult to bring out the much of the useful information in the repository. The recommended thesaurus is the Aquatic Sciences and Fisheries Thesaurus.

Keywords: Aquatic Commons repository, information retrieval, information services, African countries, information handling, information systems, documentation, bibliographic information.

Introduction
It has been observed that the discovery of information technologies has positively enhanced the dissemination of information. Many methods have evolved for prompt sharing of information through well-established networking (Ibeun 2010). The Aquatic Commons Repository is a website that provides global access to digital bibliographic information of institutions, organizations and societies. It is an initiative of IAMSLIC and the membership of any research or development institutions is voluntary. It is a thematic digital repository covering the natural marine, estuarine/brackish and freshwater environments (Collins 2007).

Information sources that preceded the Aquatic Commons, such as ASFA, CAB, AGRIS, etc., have helped solve the problem of awareness and visibility but not accessibility to existing literature (Ibeun 2010). They have also helped create awareness of grey literature, which abounds in the subscribing institutions. Developing countries have used this to advantage. This discussion examines the level of contribution of African countries to the Aquatic Commons repository and the challenges of retrieving information from the system.

Methodology
Data for this study were collected from the Aquatic Commons website. The agencies uploading articles to the website were identified. The total number of articles uploaded to the repository as at May 2011 was summed up for comparison. The agencies and the articles uploaded from participating African countries were also identified. To determine the level of usage, countries that downloaded more than 2000 times as of July 2011 were identified to see how many African countries were in this group. Four search formulations were used in retrieving information from the repository. The system descriptors were evaluated with the document retrieved to assess the relevance and precision of subject descriptors used by those uploading articles to the repository.

Results and Discussion
Input to the repository from Africa: Technology development always starts from the developed countries, while developing countries like those in Africa import them for use. Some of these technologies are participatory in nature. Developing countries trail behind developed countries. This study shows that this is the trend in the Aquatic Commons project. There are 82 agencies listed on the Browse by issuing agency section of the Aquatic Common website. When the number contributed by agencies are summed up, there are 3, 867 entries. Table 1 shows that only 8 institutions from five African countries contribute entries to the repository. This number formed 9.8% of the total contributing agencies. These 8 institutions contributed 596 entries or 15.4% of the total submissions. Nigeria alone contributed 81.5% of African submissions, or 12.6% of the total contributions.

S/N	Country	Institutions	No. of Entries	Total Country Entries
A	**Malawi**	1. Bunda College of Agriculture	18	18
B.	**Nigeria**	2. Deutsche Gesellschaft fur Tecnische Zusammenarbeit (Nigeria Office)	19	
		3. National Institute for Freshwater Fisheries Research	36	486
		4. Fisheries Society of Nigeria	431	
C.	**Uganda**	5. Lake Victoria Fisheries Organization	73	
		6. National Fisheries Resources Research Institute, Uganda	2	75
D.	**Tanzania**	7. Tanzania Fisheries Research Institute	2	2
E.	**Sierra Leone**	University of Sierra Leone Fourah Bay College Institute of Marine Biology & Oceanography	15	15
Total	**5**	**8**		**596**

Table 1. Contributions from African countries.

Downloads From the Repository

The number of downloads from the repository as of July 2011 was 233,781. This was an increase of 154.8% compared with June 2010 for countries wthat downloaded over 2000 documents. Nigeria downloaded 11,445 times as shown on Table 2. This formed 4.9% of the total downloads from the repository. No other African countries downloaded more than 2,000.

Countries	June 2010	July 2011	% Increase in Downloads
USA	49,477	113,794	230%
India	8,236	18,873	229%
UK	5,223	11,654	223%
France	4,255	21,247	499%
Argentina	3,745	7,660	205%
Mexico	3,175	6,411	202%
Nigeria	3,173	11,445	361%
Philippines	2,913	8,094	278%
Canada	2,692	6,120	227%
Germany	2,532	15,825	625%
Turkey	2,243	3,135	140%
Malaysia	2,102	4,493	214%
Total	**89,766**	**228,751**	**254.8%**

Table 2: Improvement in the Number of Downloads

Out of the total downloads from Africa, Nigeria downloaded 64.2% and 59.2% in 2010 and 2011 respectively. It is easy to attribute this to the population of Nigeria. Generally analysis has shown that African countries have low levels of participation in the Aquatic Commons Projects both in input and usage. However, it is encouraging that some African countries such as Ghana, Egypt, Ethiopia, South Africa and Tanzania which do not yet contribute documents are using the repository as shown in Table 3. The number of downloads between June 2010 and July 2011 rose from 4,943 to 19,321, an increase of 291% for African countries within a span of a year. This is a good omen for Africa, for it shows increase in awareness of this important source of information materials for fisheries and aquatic scientists and libraries. This is an indication that the repository is fulfilling the purpose for which it was been created.

Countries	June 2010	July 2011	% Increase in Downloads
Nigeria	3,173	11,445	361%
Kenya	574	1,745	304%
Egypt	702	1,598	228%
Ghana	252	866	344%
Ethiopia	242	821	339%
South Africa	-	2,174	-
Tanzania	-	672	-
Total	**4,943**	**19,321**	**391%**

Table 3: Downloads From African Countries

Possible Reasons For Low Participation

There must be some reasons for the low levels of participation. Hopefully these reasons will call for self-evaluation and rededication to the project because African countries stand to gain tremendously from the development of the repository.

(a) **Ineptitude of African Librarians and Other Stakeholders**

The word ineptitude has been used in the sense of lack of skill. Most of the librarians probably lack the skill for uploading articles to the website. Also possible is the uncooperative attitude of the organization to provide required facilities to enhance participation. However, the doors of FAO through the ASFA project are wide open for assistance in helping any serious librarians and other stakeholders to upload. Also the staff of the FAO Fisheries Branch Library are available for mentoring and assistance in uploading entries from any African who seeks assistance. This probably explains why Nigeria uploaded 486 entries.

(b) Lack of Commitment By Stakeholders

By stakeholders, I mean librarians and relevant institutions. Participation in most international projects requires personal commitment by desk officers. It is the feeling of this author that stakeholders from African countries participating in Aquatic Commons projects are not committed enough to the project, although it would provide publicity and international recognition. Stakeholders from Africa should expand their levels of participation. The number of entries uploaded to the system from Nigeria is as a result of the commitment from the NIFFR Library in harnessing fisheries information in the country, and from the Fisheries Society of Nigeria, which is also committed to make its activities visible. The summation of this argument is that dedication and commitment is the key to effective participation in a project like Aquatic Commons.

(c) Refusal to Create Awareness For the Project

The concept of the Aquatic Commons was initiated by the International Association of Aquatic and Marine Science Libraries and Information Centers (IAMSLIC) in 2006 and presented to IAMSLIC members through IAMSLIC mail services. This was reinforced by FAO through ASFA Board meetings followed by personal correspondence from Jean Collins, who was then heading the FAO Fisheries Branch library of FAO. Jean Collins was the "Mother of African Fisheries Librarianship." She found time to educate African librarians about current international happenings and ensured African participation in projects such as ASFA, IAMSLIC and Fisheries Networking. Internationally, IAMSLIC, ASFA and FAO have played roles in creating awareness of the project. The next stage was for the national partners in turn to champion the course of the Aquatic Commons Projects in their respective countries by contacting relevant stakeholders in the fisheries and aquatic sciences. The level at which this was done by AFRIAMSLIC members reflected the level of African participation.

(d) Lack of Feedback Mechanisms

The design of the Aquatic Commons website gives room for feedback. The "Browse by Issuing Agency" is an avenue for contributing agencies to check on what they have contributed. Feedback creates room for satisfaction and encourages further participation. The national partners should create a way for participating institutions not only to know what they have contributed but also to see it on the website. This means that the librarian must be a step ahead of contributing institutions if he/she is to have leadership role.

(e) Language of the Repository

There are about 50 countries in Africa and 29 have French as official language (http://en.wikipedia.org/wiki/List_of_countries). Since the language of the repository is in English, these French-speaking countries cannot participate fully, thereby reducing the level of their contribution. There are 21 English speaking countries in Africa (http://englishspeakingcountries.org/Africa/), and more of them are members of IAMSLIC, which has English as its official language. This explains why the countries that have contributed and used the repository most are English speaking, and why about 58% of African countries are likely not to be active participants in building and using the repository. IAMSLIC should intensify its membership drive in African French speaking countries.

Strategies For Increasing African Participation

Clearly the level of African participation in the Aquatic Commons repository is low. I have deliberately refrained from comparing submissions on Regional Groups (AFRIAMSLIC, CYAMUS, EURASLIC, Latin America, Pacific Islands, SAIL), but instead have focused on Africa. This does not mean that other regions do not also need to increase submissions to the project.

Since Nigeria contributed about 82.2% of submissions from Africa, I will share the strategies employed there.

- **Identification of Relevant Agencies.**
  In Nigeria, from the beginning it was clearly important to identify organizations publishing on fisheries and aquatic sciences. The author then grouped the organizations into institutions, associations/societies, journal publishers and commercial publishers (Ibeun 2007). This grouping helped determine the strategy to be adopted in selling the Aquatic Commons Project to each group.
- **Creating Awareness For Participation**
  Awareness was created through seminar presentations on "Participation in Aquatic Commons repository: advantages to fisheries institutions, scientists and publishers" (Ibeun 2007). The seminars made possible interaction and questions. The advantages of the project were highlighted and issues such as loss of copyright, safety of documents, loss of financial benefits and access to the website were clarified. Abridged editions of the seminar were sent to journal publishers to encourage their

participation. These efforts are responsible for the level of participation of Nigeria. Some of the advantages were that the authors and their works would be internationally visible, giving their work international recognition.

- **Feedback Mechanisms**
  To sustain the level of participation, feedback is necessary. The mechanism adopted was a paper titled "International visibility and accessibility of articles in the proceedings of the Fisheries Society of Nigeria through Aquatic Commons repository" (Ibeun 2010). It highlighted the number of downloads from a particular proceedings that was first uploaded to the website and the different countries from which downloads were made. The paper also showed that out of the ten top downloads from the Aquatic Commons, a Nigerian paper from FISON proceedings was 8th. The paper concluded that more people have become aware and gained access to the proceedings of the society through participation in the Aquatic Commons repository (Ibeun 2010). Reaction to the presentation by members and officials of the society was positive.

Challenges in the Usage of the Aquatic Commons Website

The beauty of any repository, like any database, is the ability to retrieve information with a high rate of precision. To achieve this, the indexer must be consistent in the choice of indexing terms and adhere to the principle of classifying a document under the specific subject it treats. Consistency in the choice of indexing terms and adherence to this principle calls for the use of controlled vocabulary. This could be a problem in a repository like the Aquatic Commons where many people with different backgrounds input data. It could then be postulated that there could be high rate of false drops when retrieving information on specific subject areas from a database or a repository not using controlled vocabulary for its indexing. This is my experience from several attempts to find information on specialized subject areas in the Aquatic Commons. This is a great challenge for the repository. What comes up when one clicks on the "browse by subject'' on the Aquatic Commons website is a list of broad subject categorizations in alphabetical order with numbers of entries against the subjects. When you click on a given subject, it brings all the "relevant" documents on the subject. To further find the relevant title, you have to go through the entries one by one. This is not only cumbersome, but time consuming. With a very small repository, this may suffice, but for a fast growing one like the Aquatic Commons, It is necessary to revisit the subject descriptors. To explain this, trial searches on specialized subjects were carried out using "search'' space at the right hand side of the website. The findings and observations are reported in Table 4 and demonstrate the challenges in using the Aquatic Commons. The present subject allocation of the metal data is not very useful for a searcher wanting information on specialized subject areas.

Conclusion

The Aquatic Commons (AC) repository is an effective means of disseminating information in fisheries and aquatic sciences. It is highly useful for any African fisheries libraries to augment their small and often obsolete collections. It is a strong complementary source of information to the Aquatic Sciences and Fisheries Database

(ASFA). The rate of growth of the repository raises the prospect of its housing millions of entries in the near future. Therefore, African countries should be active participants by developing the necessary skills and going into partnership with other international institutions to upload relevant documents. Desk officers in participating African countries should show personal commitment and create awareness for the project, and set up feedback mechanisms to further stimulate the interest of participating agencies.

The reason for the mismatch of descriptors and the documents is probably the use of keywords in content. Free indexing is not acceptable for a specialized database the size of the Aquatic Commons. This will only lead to numerous false drops when retrieving information from the system. It is a common request from scientists that they need information from a given country. From the trial searches carried out, it appears that the repository is grossly inadequate for geographic information. The Aquatic Commons has a high growth rate, and the number of items in it will continue to increase at an exponential rate. To enhance retrieval of information from the system with high precision, a thesaurus must be used for inputting articles into the system. The most tested and therefore the recommended thesaurus is the Aquatic Sciences and Fisheries Thesaurus. In the absence of this, it will be difficult to maximize the accessibility and availability of the information that abounds in the repository.

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Table 4: CHALLENGES IN RETRIEVING INFORMATION ON SPECIALIZED SUBJECT AREAS

Search formation	Title Retrieved	Descriptors Used by the System	Observation/Comment
Fishery Biology	Reference growth rate – a simple and handy parameter summarizing the influence of environmental conditions. Information on Fishery Research no. 58 P. 1-11 by Bethke, Eckhard (2011)	Biology Management	**Biology** and **Management** are too broad to describe the article. **Growth Rate** best described the article but could also be indexed under **Fishery Biology** and **Environmental conditions**
	Diagnosis and management constituency of small scale fishes. Penang, Malaysia, WorldFish Center by Evans, L and Andrew N. (2009)	Management Fisheries Aquaculture	**Fishery Management** and **Artisanal Fishery** best described the document. **Fisheries** as a descriptor is too broad. **Aquaculture** as a descriptor is out of place as a descriptor. The article should not have been retrieved under **Fishery Biology** because it was not so indexed.
Fish Marketing	Recasting the net, defining a gender: agenda for sustaining life and Livelihoods in fishing communities by Chennai, India, International collective support of Fish workers (2010)	Management Fisheries Policies	The question is, why the article should be retrieved under **Fish Marketing**, when even the system does not describe the document as such. Going through the abstract the descriptors that best described the document are: **Gender, Fisherfolk, Livelihood Artisanal Fishing** and **women**
	Assessment of access to health services and vulnerabilities of female fish trader in the Kafue Flats, Zambia: analysis report by Lungu, A and Husken, S.M.C. (2010)	Health Fisheries Sociology	Why this document should be retrieved under **Fish Marketing**? The system does not describe it as such. **HIV/AIDS, Women, Public health** are better descriptors for the document
Search formation	**Title retrieved**	**Descriptors used by the system**	**Observation/comment**
Cage-culture	Cage culture in reservoirs in India (a handbook) by Das, A.K., Vass, K.K., Shrivastava, N.P. and Katiha, P.K. (2009)	Fisheries Aquaculture	The subject descriptors are too broad. Although the document discussed **Fisheries** and A**quaculture,** the article specifically treated cage culture. **Cage culture** is the most suitable descriptor. It could also be indexed as **Fish culture** which is a broader and related term.
	Recommendation domains for pond	Aquaculture	The observation is similar to the cage culture. **Aquaculture** as a descriptor

	aquaculture: country case study development and status of freshwater aquaculture in Malawi by Russell, A.J.M., Grotz, P.A., Kresemer, S.K. and Pemsl, D.E. (2008)		is too broad. "**Pond culture** and **Freshwater Pond Culture** would better describe the document. Also **Policies, Production** and **Fishery Management** would enhance accessibility to the document.
Fisheries Extension	Identification of larval sea bases by Vanersea, M.ld. et-at (2008)	Ecology Fisheries Chemistry	Going by the title and abstract of the article, there is no reason why this document should be retrieved under **Fisheries Extension** because it has not been so described by the system. The specific discussions of the paper are in the area of **Identification, Larvae** which are good descriptors for the document.
Searching for Geographic information	Attempt was made to search for information on geographic basis		The result shows that many articles retrieved do not correspond with the search. For example when information was search for India, Malaysia, Zambia etc, articles on other countries were retrieved. There is no professional explanation for this.

AFRILIB, ONLINE UNION CATALOGUE OF ODINAFRICA LIBRARIES: PAST, PRESENT AND FUTURE

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37th IAMSLIC Conference
Zanzibar, Tanzania, October 16-20, 2011

AFRILIB, the union catalog of library partners of ODINAFRICA (Ocean Data and information Network for AFRICA), was built during phase II of the project (2001-2004). The main objective was to assist the marine information centers and libraries within Africa in making available online their local resources. AFRILIB was developed when Internet connections were very slow or limited in most participating countries. Currently, AFRILIB is upgraded to include interlibrary loan and resources sharing between partners, and to facilitate information access from Africa to a wide community of users. It contains more than 15,000 records such as journals, monographs, and grey literature, making the database an important information source in marine sciences and coastal ecosystems in Africa. The central database is hosted in IODE. The ODINAFRICA libraries have moved to the new integrated library management system (ILMS) ABCD and repository systems AGRIOCEAN-DSPACE. The new version of AFRILB will be developed upon DSPACE technology and will use its harvesting functionalities to update automatically the database with new records from local libraries. The interoperability with other systems will be the key principle of this new approach to improve access and use of marine information for research and management.

OUR SAFARI IN MIGRATING FROM UNIVERSAL DECIMAL CLASSIFICATION (UDC) TO LIBRARY OF CONGRESS CLASSIFICATION (LC)

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Abstract: This paper will share our experiences in migrating from UDC (Universal Decimal Classification) to LC (Library of Congress) in our Library. At times it was very stressful and occasionally hilarious. Some background information is given to explain the necessity of the decision and the highs and lows during the process. We hope that in sharing our experiences we can learn and get feedback from participants in this Conference. Included is a pictorial record of some activities and challenges. As we move from our hither to traditional library to a modern digital library, we hope to get useful input on the way forward from our distinguished colleagues in this conference.

Keywords: Classification; Library of Congress classification; Universal Decimal Classification.

A Prayer For Librarians

- Our chief Librarian at BNB
- Hallowed be thy catalogue,
- Thy issues be increased,
- Thy books be strictly-ordered,
- In fiction as they are in Non-Fiction
- Give us this day our overdue books back,
- And forgive us our Classification Errors,
- As we forgive those who misplace our books
- As they know not thy prophet Dewey
- Lead us not into false subject Headings,
- But deliver us from categorization
- ...and cuts in Opening Hours
- ….and reductions in the Book Fund
- For thine is the Issue System,
- The date stamp
- And the Light Pen
- Forever and Ever
- And the wisdom to know when its time take a break
- Amen! (Sue Marsden - IFLA)

Historical Background

- 1948 – MIOME (Mombasa Institute of Muslim Education)
- 1966 – Mombasa Technical Training Institute.
- 1972 – National Polytechnic (Mombasa Polytechnic)
- 2007 – MPUC (Mombasa Polytechnic University College). Through Legal Notice No. 160 of 23rd August 2007

Trustees

The main purpose of setting MPUC as it is known today was to provide technical education to Muslim children in East Africa. Initially it was set up through donations from the following people:

- Sir Philip Mitchell then Governor, Kenya, £100,000
- H. E. The Sultan of Zanzibar, £100,000.
- The Bohra Community of East Africa, £50,000

Figure 1. MPUC Library Building

The MPUC Library is part of the MPUC infrastructure for learning and research. The collection is about 30,000 volumes that are housed in a large one-story building currently undergoing extensions. The readership includes all staff and students, external users and the community around the University as a way of giving back to the community and promoting good neighborliness or Corporate Social Responsibility (CSR). These users number about 10,000 and are served by about 30 staff.

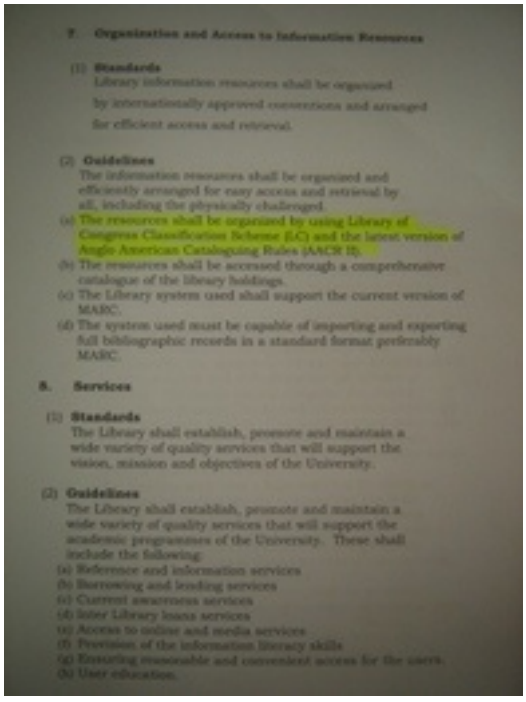
Since its inception the collection was classified using UDC (Universal Decimal Classification), but this year it was decided to migrate from UDC to the LC (Library of Congress) Classification Scheme. Since UDC is not used by many academic libraries, so it was necessary to change. We needed to conform to certain standards as well. The Commission of Higher Education (CHE) has guidelines and standards for University Libraries.

Just like other libraries we have to classify our books so that our readers will be able to find them on the shelves. As we all know classification in its very simple terms means an arrangement of books on shelves- but on its own, it may not be enough. One of the greatest minds in the profession told us in 1931 that every book has its

reader but while shelf arrangement is necessary, it is by no means sufficient to get every book to its reader. The catalogue can be of immense use in this matter.

Figure 2. Ranganathan

As a library we also share our resources with other libraries and Information Centres through Inter-Library Loans (ILL) hence, the need to conform to certain standards regionally, internationally etc. The Commission for Higher Education has issued Standards and Guidelines for Academic Libraries so we really had no choice but to change to LC.



7. **Organization and Access to Information Resources**

(1) **Standards**
Library information resources shall be organized by internationally approved conventions and arranged for efficient access and retrieval.

(2) **Guidelines**
The information resources shall be organized and efficiently arranged for easy access and retrieval by all, including the physically challenged.
(a) The resources shall be organized by using Library of Congress Classification Scheme (LC) and the latest version of Anglo American Cataloguing Rules (AACR II).
(b) The resources shall be accessed through a comprehensive catalogue of the library holdings.
(c) The Library system used shall support the current version of MARC.
(d) The system used must be capable of importing and exporting full bibliographic records in a standard format preferably MARC.

8. **Services**

(1) **Standards**
The Library shall establish, promote and maintain a wide variety of quality services that will support the vision, mission and objectives of the University.

(2) **Guidelines**
The Library shall establish, promote and maintain a wide variety of quality services that will support the academic programmes of the University. These shall include the following:
(a) Reference and information services
(b) Borrowing and lending services
(c) Current awareness services
(d) Inter Library loans services
(e) Access to online and media services
(f) Provision of the information literacy skills
(g) Ensuring reasonable and convenient access for the users.
(h) User education.

Figure 3. CHE Guidelines.

With few financial resources (as in most developing countries) this was a very expensive undertaking and perhaps one might ask how we changed from a working scheme (UDC) to a new one (LC) especially since we didn't even have hard copies of the LC schedules. Time management and timelines were a real challenge.

There are many classification schemes and all of them have their advantages and disadvantages. While LC for us was a matter of compliance, it has some advantages as well just like other most widely used universal classification schemes:

- It is flexible - and simply works!
- In the absence of any overwhelming conviction of the superiority of any other classification system over it, one naturally tends to choose the system that saves money and in any case all schemes are good, and necessary so if LC can do the job and its cheaper why not choose it?
- Sometimes library administrators cite "administrative resources'."which simply means cost differentials in terms of staff time spent and proportions of the budget spent directly on the operations.
- It is now available in machine-readable format and online so we didn't have to wait for the hard copies ordered eons ago.
- It was designed and is used by the largest Library in the world (The Library of Congress) so it must be good!

Figure 4. The Library of Congress.

- *It covers all subject areas, which can enable improved browsing and subject searching.*
- *It is widely supported in terms of its development and survival and has been repeatedly revised and updated since its first publication by responsible international bodies.*
- *Regular library users would be familiar with it.*

The Challenges

- Resistance to change.
- Stringent procedures (Public Procurement Oversight Authority - PPOA), which caused delays in getting even the very basics - e.g. pencils, dust masks, tattle tapes and other (computer) stationery.
- Limited number of PCs (we started with 4), low Internet connectivity and frequent power failures.
- Inadequate professionally trained staff.
- Those who didn't follow instructions carefully or pay attention to detail created a lot of conflict and rejection by other members.

- Wrong data entries which meant a senior member of staff had to go through all of them with a tooth comb.
- Lack of photocopying services in the Library delayed production of data entry forms.
- Environmental Issues
- Re-arrangement of our shelves, to position them in middle of the Hall(s) in order to allow our readers use of natural lighting.
- Manpower verses woman power!

Figure 5. The Challenges.

Figure 6. Shelf arrangement before and after.

Once it became clear that we had to migrate from UDC to LC in order to meet CHE requirements and timeframes I was surprised at the desire and enthusiasm to "get on with it" and finish! The staff were willing and ready to learn the new system and listened very carefully as they were being taught. I learned a lot from my colleagues during the series of meeting that we held and received many very well thought-out suggestions.

Figure 7. Staff Listening In a Meeting

When finally most of the staff understood, I began to notice some positive changes among my colleagues. Encouragement and guidance from the Librarian kept the team spirit going. A visit by the top management of the University College was really the icing on the cake. It made our day.

Figure 9. MPUC Management Team.

Achievements

At the end of the exercise and after we repositioned of the shelves to make use of natural lighting, all the initials conflicts and disagreements were forgotten. So teamwork finally won and we were rewarded, but most importantly everybody was a winner.

Immediately after the conversation, Ms. Claudine Mwaka gave birth to a baby girl thus a new Librarian thus ensures the Library will live forever! Members of staff are still arguing which name to call her i.e. Conversion Migration or Library of Congress. Suggestions welcome.

Figure 10. Ms. Claudine Mwaka's daughter.

After successfully completing this exercise despite very difficult conditions, we won accolades from the Management of the University College. We could win the Department of the Year Award (DOYA) in our internal competitions. Even with limited financial resources we were able to conclude this exercise successfully. On the whole there was moral support from all including management and we all won as a team.

Conclusions

We now need to consider the way forward, as well as whether we could have manage the change differently. We are thinking of transforming our hitherto traditional library to a modern digital Library and we welcome your input and views. I also welcome you to visit MPUC and Mombasa.

Acknowledgments

My acknowledgement to our staff for their cooperation; to the
MPUC Management for their support during the exercise and for allowing me to attend this conference as well; to Dr. Marangi as well for his input and encouragement while writing this paper; and to IAMSLIC and C. Wagues for giving me an opportunity to share with you.

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THE TECHNOLOGICALLY CHALLEN GED ACADEMIC LIBRARIAN: WHAT HAS CHANGED IN THE PROVISION OF INFORMATION SERVICES IN THE AGE OF SOCIAL INTERACTIONS?

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Abstract: Since late 2007 my professional life has changed from that of a traditional librarian to what at the time was called a 2.0 librarian. So the question was: What librarian am I now? Am I a hybrid? Do I have the required skills to handle all the new online interactions? Three or four years down the road, I look back at my experiment to provide "one click" access to services and resources for the University of Johannesburg science users, and found that skills are learned, change is possible, social tools can be very helpful and we, the librarians, are still current and competitive. Oh, and we can work 24/7. The paper covers the new roles the librarians are taking in assisting researchers and learners in locating and accessing relevant information. We have gone from implementation of social tools such as Facebook, Twitter, blogs, wikis, bookmarking, etc. to being web designers and content creators for subject portals. The paper provides examples of embedded librarianship in the virtual learning environment as a way to bring the library to the learner. The South African academic library environment is challenging to both the traditional and online roles of the librarians. Do we meet the users' expectations? Will the implementation of mobile technology be a better, value added option? The paper makes specific references to the support provided to zoology users.

Keywords: Academic libraries, South Africa, technology, social networking.

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CREATION AND DEVELOPMENT OF THE ELECTRONIC LIBRARY FOR THE FISHERY INTITUTE OF RUSSIA

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Abstract: The beginning of the new millennium was characterized by the rapid development of information technologies in science and education. Use of traditional library funds for the dissemination of scientific information and research was insufficient. The Internet offers great opportunities, but simple searches cannot always give good results. Thus there was a need for the creation of thematic information collections and information resources in the fields of fisheries and oceanography. Specialized electronic libraries or repositories began to be created and in 2007 ODINECET was started. The IODE/ IOC/UNESCO project organized courses on the creation of electronic libraries and repositories. DSpace was accepted as the software and the international repository CEEMAR was created through the efforts of 5 ECET countries. IBSS-repository (Ukraine) was created in the same time, and in 2008 the repository of the Russian Fisheries Institutes was created in VNIRO with support of the Russian Federation Agency. Currently the repository Manakin has a database of more than 1,700 full-text documents from seven Russian libraries. Further expansion and updating of the database are planned.

Keywords: Digital repositories, Dspace, Russia, fisheries.

INFORMATION SHARING IN AFRICA: RECONCILING COPYRIGHT PROTECTION AND ACCESS TO INFORMATION IN GREY LITERATURE

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ABSTRACT: Information sharing is vital for both authors and patrons. Some of the notable advantages for authors are the social recognition and economic benefits that are crucial components of copyright protection. Unfortunately, copyright laws are often regarded as major hindrances by users. Furthermore, many authors, especially authors of grey literature, hesitate to share for fear that their information will be misused or stolen. Many people in Africa today have the misconception that copyright protection is synonymous with published works, and that unpublished works are not protected by copyright. But copyright is meant to protect authors from unfair use of their literary and artistic works whether published or not, as long as they are expressed in written or recorded form. Sharing of grey literature is beneficial not only to the author but to nations as whole. Therefore African governments should educate their citizens about the importance of seeking copyright protection and enforcing laws to protect authors' works from unscrupulous or malicious users. Promoting copyright protection will enhance the availability and sharing of information in an informed society.

Keywords: Grey literature, copyright, Africa, indigenous knowledge

Introduction

According to the World Intellectual Property Organization (WIPO 2011), copyright protection is the legal protection extended to creators of original literary and artistic works, regardless of whether the works are intended to be published or not. Any original literary expression of ideas from the human intellect is liable to copyright protection. These expressions may also contain indigenous knowledge.

Davenport and Prusak (2000) define indigenous knowledge as a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information strongly synonymous with a specific society. Furthermore, Mchombu in El Halaby (2006) defines information as it refers to the poverty reduction ideas disseminated by agencies, the mass media, posters, video, interpersonal sources, social networks, etc., but such information is not yet knowledge.

Knowledge, on the other hand, is information coming from different sources that has been consolidated, processed and internalized by individuals, a community or society in the context of what they know already, and can either add it to their knowledge base or reject it. Thus knowledge is filtered and contextualized information that can be used to take action against poverty.

Besides the fact that many authors of grey literature in Africa are those whose works dwell so much on rich indigenous information or knowledge, and are often rich in culture, humanism and spirituality, there is little urge and interest by many to share their knowledge. Some authors do believe that sharing of such vital information is a taboo and degradation to their own cultures; therefore it is only conserved for the use within the secretive cults or circles of their cultures. An example of such cases is that of vital information of proceedings of Nyau initiation ceremony for adolescent boys and girls among the Chewa and Mang'anja people of Central and Southern Malawi, respectively (Van Breugel, 2001). Another example could be that of cultural information about proceedings of Jando and Unyago initiation ceremonies of boys and girls among the Yao people of Central Eastern and Southern Malawi, Southeastern Tanzania as well as Northeastern Mozambique (Fiedler, 1996). There is still a lot of authorship about such initiation ceremonies, information about which is secretly guarded on grounds of not wanting to unleash taboos.

However, there are a lot other literatures of unpublished information or indeed indigenous knowledge about the physical environment, subsistence farming, fishing and ecological survival that are easily shared within and among cultures of Africa for numerous reasons and intentions. This is information important not only to human survival but also to academic research or action, and it can be shared and disseminated for the benefit of all (Mchombu in El Halaby 2000). Perhaps of greater importance are those works containing vital indigenous knowledge that are hidden or withheld because their unpublished authors anticipate that sharing their information will not benefit them in any way; or they may simply feel that their information will be stolen and be re-used for academic and economic gain. This is a clear indication of lack of security in as far as copyright is concerned.

Copyright is a very fundamental component of intellectual property in sharing and preservation of indigenous knowledge. Authors of unpublished works feel more prone to ill-practices of information theft since there have been numerous cases in many parts of Africa where information was innocently taken away by scientists or researchers but was then re-used to greater benefits without compensating the originators (Brush and Stabinsky, 1996). Copyright is meant to financially and morally benefit owners of works. Compensating indigenous people for sharing their knowledge and resources might both validate and be an equitable reward for indigenous knowledge of all available resources (Brush and Stabinsky, 1996).

The State of Copyright in Africa

The biggest challenge in Africa in as far as intellectual property is concerned is that most countries have restrictions to access to knowledge that revolve around restrictive copyright practices and regulations (Nicholson, 2006). The problem with such regulations is that they use copyright law against access to and availability of knowledge and not for setting boundaries, as copyright protection is intended to, to how access to knowledge should be exercised and how availability of such knowledge should fairly benefit both the owner and the user. In other words, such restrictions are basically set to politically benefit the governments and not necessarily to strike a balance of benefits between owners of information and information seekers and/or users.

And worse still, proper enforcement and preservation of intellectual property laws, let alone copyright laws, might not be a priority area to many of these African countries that might focus on other developmental areas. Public resources that might be needed for enforcement of such laws are so meager that such things as primary healthcare; Anti-Retroviral (ARV) drugs distribution and access; HIV/AIDS home-based care projects; safe water projects; safe motherhood projects; free primary education; and food security are regarded as more important than investment in the enforcement and preservation of copyright laws (Wei, 2007).

Another critical challenge that poses a threat to copyright protection in Africa is lack of knowledge among indigenous people about the availability of copyright protection. This might further be aggravated by illiteracy among these people. Such people normally have vital knowledge about the essentials of their cultures but might not be able to articulate it, for example, for academic or research purposes. As a result, academic researchers might 'snatch' such knowledge from the people with little compensation or nothing at all. Since over the years many African indigenous people have known about such practices by some researchers, they tend to hide the knowledge, a move that benefits neither them nor the researchers (Brush and Stabinsky, 1996).

Creating a Marriage Between Copyright Protection and Access To Indigenous Knowledge

The first step in the creation of such a marriage should involve dedication by African governments to the promotion of the publishing industries and the book trade. This is one of the easier ways through which authors can benefit from their works. Unpublished authors should be encouraged or assisted to publish. Such a bold move will promote availability of knowledge by widening access to it. Although various studies, including those whose findings were presented at the 2005 African Copyright Forum in Kampala, Uganda, have shown that not many people in African can access information due to copyright and economic reasons (Nicholson, 2006), it is imperative that African governments take initiatives in the form of information subsidies. This should entail strong copyright protection for authors but with heavily subsidized prices for information. In this way, both the authors and users will benefit from their own capacities as owner and user. Consequently, not only will this promote literacy among people of the African nations, it will also help create knowledgeable societies that will stand strong for and in both individual and national developmental activities.

Secondly, those authors of indigenous information who cannot publish their works for whatever reasons should have

their information collected and deposited into national repositories for easy public access. These national repositories should be augmented and complemented by urban as well as rural public information centers, making it easier for people to access and share information. This should be done in conjunction with an economic benefit for the authors. These information subsidies should also benefit public and academic libraries that will acquire materials for their clientele at reasonable prices, provided the materials are being used for information needs and not for economic gain. As soon as authors realize that they are protected, they will be far more likely to release information for public access and sharing.

Finally, the World Intellectual Property Organization should extend its mandate to helping African governments not only to create, promote and instill stronger but non-repressive copyright laws, and also to ensure that the information user is regarded as standing parallel to the information creator as a receiver of whatever is created.

As opined by Mchombu in El Halaby (2000), the key issue in information and knowledge sharing in Africa is to overcome poverty. Therefore, information sharing is a means to poverty alleviation and such alleviation should begin right with the information itself, as a benefit to a creator of information as well as a user of that information as a recipient.

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DO THEY KNOW IT IS THERE?
ASSISTING RESEARCHERS AND EDUCATORS IN LOCATING AND PRESERVING INFORMATION

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7th IAMSLIC Conference
Zanzibar, Tanzania, October 16-20, 2011

Abstract: The paper discusses the methods that have been implemented successfully at the Bunda College of Agriculture library to assist researchers and lecturers in locating and organizing information on aquaculture and fisheries science. These methods include building a local database and collecting and organizing reports and publications from government and non-governmental organizations. Library users do not always know how to access various information sources, or even what is available to them despite a wealth of information in print and electronic formats, offline and online. While it is difficult to organize online information meaningfully, it is possible to provide means of making users aware of the various ways of gaining access to relevant information in their respective subjects of interest. In addition, ordinary library services can be instrumental in organizing and making accessible locally produced information items. The paper therefore paints a picture of library services that are relevant to users in the digital era.

Keywords: Aquaculture, fisheries, information, Malawi.

MANAGING DIGITAL INFORMATION RESOURCES: A QUEST FOR AN AFRICAN STRATEGY

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Abstract: African emancipation from information deficiencies will require a continental strategy as the revolutionary trend of information in the global information ecology has created greater challenges for the continent of Africa. The discovery and proper management of information with efficient preservation will greatly enhance the mobility, accessibility and applicability of timely and relevant information, and will also help to bridge the information divide in the continent. This paper critically examines the fundamental issues facing the continent of Africa for effective and efficient management of digital information. Apart from the obvious challenges of infrastructural deficiencies, there are other inherent issues that have caused the continental information leanness. These include the information seeking behavior of Africans, especially the scientists and researchers who are generators of data and information, and the need for ways to manage and add value to information. The paper therefore makes suggestions for strategies to confront the challenges, and strongly recommends that African countries elevate information and communication technology (ICT) management to the status of national and continental policy in order for the continent to benefit from the digital information revolution

COLLECTION OF MALAWI'S SCIENTIFIC GREY LITERATURE FOR LOCAL AND INTERNATIONAL USE

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Abstract: Since 2008, Bunda College of Agriculture Library has been working jointly with CAB International (CABI) (based in the United Kingdom) on an analysis of conservation management and the dissemination of institutional knowledge in Malawi. The work involves visiting agricultural sector institutions and libraries, collecting agricultural research information in Malawi and sending it to CABI for scanning and archiving before the information is made accessible online. The project has assisted in exposing Malawi's scientific research information to a wider audience. The paper discusses the project's challenges and benefits.

Keywords: agriculture, scientific research, conservation, Malawi.

Introduction

Increasing Malawi content online, especially scholarly and research information, has been the intention of Malawi libraries. There is a lot of locally generated scientific information both published and unpublished available in libraries or offices of particular institutions. Such information, vital though it might be, has limited or no accessibility. It is also vulnerable to damage or loss. Efforts are therefore being made to unearth such information, expose it widely and preserve and conserve it. One such effort is a joint project between CABI and Bunda College of Agriculture Library that is aimed at collecting, scanning and creating an electronic information resource available online.

Background To the Work

Malawi is a member country of CAB International (CABI) and a researcher at one of government agricultural research station is a member of CABI Board. As a member country, most libraries and information centers in Malawi receive CABI publications. Malawi requested for support from CABI in strengthening agricultural information management in national systems.

It is against this background that Bunda College Library embarked on a joint project with CABI on *"*Situation analysis of conservation, management and dissemination of institutional knowledge.*"* This followed a visit by CABI officials, Janet Halsall, who is based in the UK and Jane Frances Asaba, based in Nairobi, Kenya, from 14th – 22nd June 2008. During that time they visited twelve agricultural-sector research institutions and libraries in Malawi to carry out an analysis of the agricultural research information archives with the aim of developing a pilot project to digitize a portion of the archive and to make it available on a global platform, to be hosted by CABI. The visit revealed that the relevant information is scattered and often not collected in libraries, and the capacity to manage information resources was largely inadequate. The concept of a repository was widely welcomed. Bunda College of Agriculture was identified as the most suitable partner in the pilot project to locate and collate suitable materials for inclusion. Collection of materials was restricted to documents published by Bunda College of Agriculture, Chitedze Agriculture Research Centre, Fish Research Unit, Forestry Research Institute, World Fish Centre, National Aquaculture Centre and Tea Research Foundation.

CABI presence in Malawi
CABI has been working with various scientific institutions in Malawi for a long time. Its activities were mostly in the distribution of its publications such as CAB Abstracts in printed form or on CD-ROMs; organizing workshops on how to search information using CABI products and services.

The project's activities were as follows:

- Collate locally published scientific materials from seven scientific institutions, namely Bunda College of Agriculture (BCA), Forestry Research Institute of Malawi (FRIM), Tea Research Foundation (TRF), World Fish Center (WFC), National Aquaculture Centre (NAC), Fish Research Unit (FRU) and Chitedze Agriculture Research Station (CARS). These institutions were chosen based on the number of scientific publications they produced.
- Estimate the number of individual articles for inclusion.
- Agree with CABI on the number of documents to include.
- Ship documents to CABI in UK (or to CABI Africa if preferable).

A total of 500 printed publications were collected and shipped to CABI-UK for scanning. They were assessed before scanned. Thereafter all the publications were sent back to Malawi through Bunda College of Agriculture Library. Where necessary, the publications were dispatched back to their originating institutions.

An end product of the project is an information resource - *Global Agricultural Research Archive (GARA)*. This is information resource has been set up to digitally capture and create an agricultural knowledge archive on behalf of developing countries around the world. The aim of the project is to preserve, disseminate and apply this valuable material and the knowledge it contains, for the benefit of current researchers and generations to come. The archive is centrally managed and maintained to enable preservation and disaster recovery and the long-term protection of knowledge that might again become inaccessible. GARA has so far 484 full-text publications from Malawi, of which 85 are on aquaculture and fisheries. It also contains publications from Pakistan and the Philippines.

Fig. 1: A snapshot of the database's first page.

Fig. 2: A snapshot of some of Malawi publications.

Reasons for Developing GARA

Concern about food security and climate change is at an all time high, and it is widely accepted that the most vulnerable communities in the tropical areas of the developing world will be hit hardest. There is much that we already know at local and national levels that could immediately improve yields and reduce losses if effectively disseminated and implemented. However, in developing countries, much of the information is not readily accessible in a format that allows it to be shared within countries, let alone across regions.

CABI is helping solve this problem by creating a network of agricultural information for the world's researchers to share through our GARA initiative. This will mean:

- Improved information sharing across borders.
- Agricultural knowledge can become integrated into the burgeoning knowledge economy, similarly to that in developed countries.
- Local knowledge will be preserved for future local use.

Benefits of accessing the GARA resource:

- Strengthen teaching and research.
- Strengthen extension services and the knowledge of farmers.
- Provide a higher profile of this knowledge to the global community.
- Bring prestige and recognition of expertise and contribution to the global knowledge base.
- Lead to better agricultural science based policies
- Release the knowledge from the past .
- Provide baseline information on issues such as loss of biodiversity, climate change, food security, traditional food crops and indigenous breeds.
- Increase citation of researchers and academics based in developing countries.

- Reduce duplication of research effort.
- Impact positively on the whole national agricultural system and particularly on farmer livelihoods.

Project Budget on the Malawi Side
CAB International provided funding for the visits to institutions to collect publications, photocopying of publications (where necessary), stationery and dispatching of publications to UK. Two trips were made to each of the six institutions to collect publications. The total budget on the Malawi side was in excess of US$7,000.

Publicity for the Resource
All the twelve institutions that were visited during the initial phase of the project were informed of the existence of the GARA. Follow-up visits were made to the six institutions whose publications were collected and form part of GARA. During such visits scientists, librarians and management were introduced to the database.

Feedback from information users
Response from local users has been good. In a survey carried out on 169 scientists in Malawi, 115 of them have accessed GARA resources at least once.

Benefits to Malawi:
- Unearthing hidden information: visits to various scientific institutions unearthed hidden and inaccessible information resources. These were kept in offices, archives, storerooms and libraries that were in some instances unmanned, for instance at the Tea Research Foundation and Fisheries Research Unit.
- Exposing Malawi scientific information to a wider audience: the publications collected assisted in making important scientific information available to a wider clientele. Information that was available in printed form and at one location is now accessible online.
- Conservation and preservation of Malawi publications: the project has assisted Malawi to preserve and conserve rare scientific publications that could have been lost if left where they were. Most of these publications were in institutional libraries, offices or rooms and not looked after. In certain institutions it was not easy to retrieve publications from where they were kept and some were not in good conditions. Scanning the printed publications will assist in preserving and conserving these rare materials.
- Strengthening linkages among Malawi's scientific institutional libraries: through this project, libraries in the scientific institutions in Malawi, especially the twelve that were visited, are working closely together. For instance, there has been an increase in the number of publications exchanged amongst them. Among the fisheries and aquaculture libraries there was already a network for sharing publications, and this project has strengthened further the already existing cooperation.

Impact Of the Database
It is evident that the resource has improved teaching, learning, research and outreach activities not only at Bunda College of Agriculture, but throughout Malawi. In a survey of 39 dissertations, theses and scientific papers (16 on aquaculture and fisheries science) produced from 2009 to August 2011, it was discovered that 17 (43.6%) of them had listed at least one publication in their references that is also accessible in GARA.

Subject	**Publications Surveyed**	**%**	**Publications' References with GARA resources**	**%**
Aquaculture and fisheries	16	41	6	15.4
Other subjects	23	59	11	28.2
TOTAL	**39**	**100**	**17**	**43.6**

Challenges To the Project
- Permission to collect the publication: permissions were sought from the institutions to collect and creating digital copies. In some institutions like the Tea Research Foundation, permission took time to be granted.

- Inability to scan the publications locally: publications were sent to UK for scanning and creation of a database because there was no capacity locally. This has affected plans to build local capacity. Malawi libraries need to build capacity to create digital library collections for locally produced materials.

However, with funding from INASP, a scanner and OCR (optical character recognition) software were purchased for use by all those institutions without any. This scanner and OCR software are housed at Bunda College of Agriculture Library.

Future Of New Publications

The project was concluded in 2009; since then more scientific publications have been produced. There are no plans to include these in the database; it is up to Bunda College Library or other institutions in Malawi to do this.

It is pleasing to note that since 2008 Malawi Libraries have created over ten digital library collections of local publications such as dissertations, theses, reports, scientific papers, speeches by politicians, newspaper articles on HIV and AIDS and gender issues. Most of these were not born digital. This paper views digitization as a process that includes scanning and creation of collections using open source software such as Greenstone, DSpace, EndNote and Electronic Records and Management System. In Malawi libraries' digitization processes started after some librarians had attended various training workshops inside and outside the country. Almost all these first generation Malawi digital library collections are currently only accessible on the respective institutional intranets. This restricts the advantages to students and researchers. However, some libraries such as Bunda College of Agriculture have taken the initiative to also make their collections available on CD-ROMs, which are distributed to other institutions. Plans are underway to have these collections made accessible online.

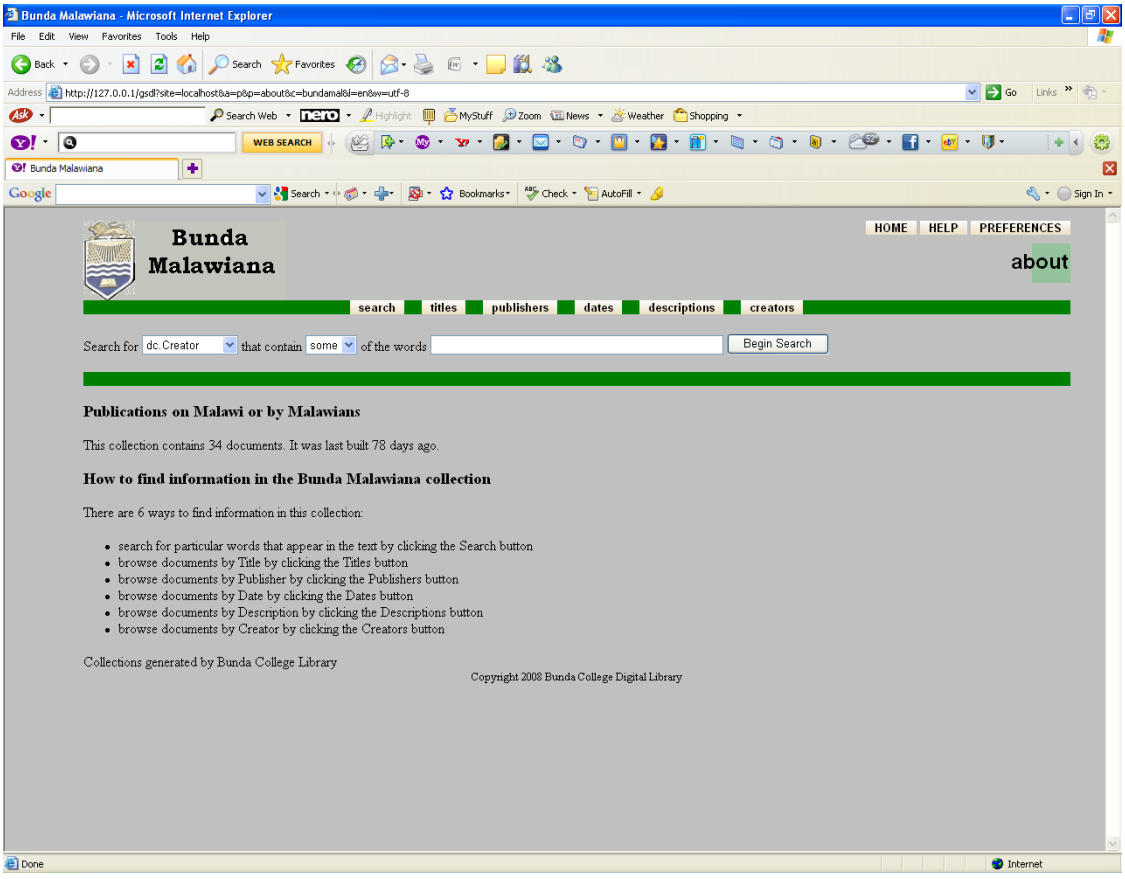

Fig 3: A sample of a locally created Digital Library.

Conclusion

Working with partners such as CABI, INASP, eIFL and IAMSLIC is one way of ensuring that Malawi content is increased and accessible online. The situation analysis of conservation, management and dissemination of institutional knowledge project which Bunda College of Agriculture Library and CAB International is one such effort. What remains is to encourage more scientists and others to access the Global Agricultural Research Archive (GARA).

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MAKING EVERY PENNY COUNT: BUILDING A WORLD-CLASS TROUT AND SALMONID COLLECTION ON A SMALL BUDGET

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7th IAMSLIC Conference
Zanzibar, Tanzania, October 16-20, 2011

Abstract: This paper will describe the collection development methods, strategies and tools used to develop a 10,000+ item trout and salmonid collection at the Montana State University-Bozeman Library (MSU). The Trout and Salmonid subject collection at MSU was created to satisfy the information needs of faculty, staff, students and non-university affiliated researchers. The overall goal is to build the world's most dynamic collection of books, grey literature, and manuscripts devoted to trout and salmon. The scope of the collection is broad and includes material on biology, ecology, angling, politics, economics, culinary arts, spiritual, literary and philosophical works. We actively collect a wide array of materials including books, periodicals, government publications, scientific reports, diaries, theses and dissertations, DVD's and audio materials. The paper addresses several methods used to build the collection using Internet based retailers and the benefits, trials, and problems involved. The importance of courting donors and soliciting donations will be examined, both in terms of value for the collection and the potential for building relationships with benefactors. There is also an overview on how to find relevant material published by small and local presses; print copies of dissertations and theses; and government documents, as well as the benefits of collecting periodicals and collecting the manuscript collections of researchers. The paper also discusses strategies for getting the best value for collection development funds and several of the tools used to locate materials and determine their informational value, such as works cited lists, bibliographies, specialty book dealer catalogs and utilizing the knowledge of experts in various disciplines.

Keywords: Trout-- North America, salmon—North America, libraries, collection development.

The Trout and Salmonid subject collection at Montana State University Library was created in 1999 to satisfy the information needs of faculty, staff, students and non-university affiliated researchers. The overall goal is to build the world's most dynamic collection of books, grey literature, and manuscripts devoted to trout and salmon. The scope of the collection is broad and includes material on biology, ecology, angling, politics, economics, culinary arts, spiritual, literary and philosophical works. We actively collect a wide array of materials including books, periodicals, government publications, scientific reports, diaries, theses and dissertations, DVD's and audio materials. When I give my tours I often describe our collection development strategy as the "six-degrees of trout & salmon". Basically if we can connect it back to trout and salmon we will, in theory, collect it. So we have material on insects, water pollution, cooking, sustainable fishing methods, works of fiction, children's books, rod building, invasive species, etc.

The collection was the brain child of our former dean, Bruce Morton and Bud Lilly, who is a well-known conversationalist and angler. The original material came from a large 10,000 plus donation of material valued at $238,000. Of this around half of the material ended up in the collection. This was because there was a wealth of material that could not be connected back to trout or salmon in any reasonable way. We received hundreds of rare antiquarian books, multiple journal runs and generally a wide smattering of material on dozens of subjects that fell within our collection development scope. At the same time we began seeking financial donations to fund endowments for collection development and a lecture series. Our location, in Bozeman, Montana, has helped our collection development efforts tremendously and makes us a good fit for this type of material. We are located within driving distance of several blue ribbon trout fishing rivers including the Big Hole, Madison, Gallatin, Yellowstone, Blackfoot and Boulder. Angling opportunities for Bull, Yellowstone Cutthroat, Brooke, Brown, Rainbow, Golden and Westslope Cutthroat exist in the state as do opportunities for Grayling, Chinook and Kokanee Salmon. Our proximity to Yellowstone and Glacier National Parks is also a plus for us. We have prolific anglers and angling

writers visit the area and our collection regularly. Bud Lilly often drops in with guests for tours and our current scholar in residence is Dr. Paul Schullery.

Amazon
In my collection development role I have used traditional and nontraditional methods to purchase items including on-line retailers like Amazon. Amazon is one of the largest booksellers in the world. Initially the company sold only books but has since expanded to sell nearly everything imaginable. You can now buy everything from groceries to table saws on Amazon. Currently they also sell both new and used books and allow individuals to sell their personal collections on their site, for a fee. I use Amazon as a collection development resource regularly for both new and used items. While there are always risks involved with buying used books, in my opinion, the savings, which allow me to purchase a greater volume of material for the same amount of money, make the risks worthwhile. And we can mitigate the risks by doing a few simple things before we place that order. Always check the sellers rating. While this is not a surefire guarantee it can be generally assumed that a better rating equals a better seller. Verify the sellers return policy to make sure if the item is in a condition that is less than it was described as or if the item is simply not what was expected based on the sellers' description that it can be easily returned. I have purchased hundreds of books this way and have returned only three. The savings can be significant. I can often buy used books and DVD's for literally pennies on dollar.

Ebay
Ebay was founded in 1995 by Pierre Omidyar as a website to buy and sell used goods. Like Amazon Ebay has exploded in popularity. You can find some great and unique items on Ebay often at very low prices I often describe it to people as a worldwide rummage sale. It has also been described as a "suckers market". Meaning you can find things vastly under priced and vastly overpriced. So beware and try not to let that competitive streak get away from you in those last few minutes and end up bidding more than you intended and more than the item maybe worth. In addition to the traditional auctions, where the highest bidder wins, Ebay also gives sellers the option of selling items using their Buy It Now option in which they list a price they will accept and buyers can purchase things for that set price without the hassle of an auction. Ebay can be a great place to find books. Most are used but new are also available to a lesser extent.

Betterworld Books
Betterworld Books is another option for purchasing new and used books and DVD's. They were founded in 2002 and market themselves as a bookstore with a soul. This is because they use a percentage of their profits to fund literacy initiatives worldwide. According to their website "so far, the company has converted more than 53 million books into over $8.6 million in funding for literacy and education….also diverting more than 26,000 tons of books from landfills." They state that they have over 8 million books available at any given time.

AbeBooks
Abebooks is an on-line marketplace for booksellers, particularly those specializing in rare books. It was founded in 1995 in Victoria, British Columbia, Canada. In 2008 it was purchased by Amazon and although it remains a stand-alone operation many of the items listed on Abebooks are also listed on Amazon. This can be a great place to find rare, antiquarian, out of print and non-English books. Nearly every rare title that I have ever searched for on Abebooks I have been able to locate. They describe their material well, know what edition of the book they are selling and are accurate when stating the condition of an item. I have also had luck with locating items and booksellers on Abebooks, and then for higher priced items, calling the bookseller directly and negotiating a better price.

Reprints v Originals
As I have stated earlier our collection is a research collection and not a rare book collection. And while we of course have rare books, will take them as donations and have purchased them they are not the focus of what we collect. Reprints, while not available for all titles, are available for an ever increasing number of rare antiquarian books and offer the same informational value at a significant savings. We collect reprints whenever they are available in addition to the cost savings they are easily replaceable and arrive in new condition.

Government Documents
Government documents can be great sources of information. While I have used Ebay and Amazon to purchase government documents I have also found that many can be had simply by requesting them from the government agency that produces them. Every two years I contact the Departments of Natural Resources in each state that has

trout or salmon in its waters and request copies of their fishing regulations and any other materials they may have related to trout and salmon. In addition to DNR's I have contacted fish hatcheries and federal agencies that oversee game and wildlife. An area that is often overlooked but can provide unique pieces of information are fish and game agencies on Native American Reservations, which have distinct rules regarding the harvesting of fish. These can be a bit more difficult to reach and sometimes will charge a nominal fee but I have usually been able to get information on their fishing regulations when I have sought it.

DVD's and Media

DVD's and other visual forms of media are sometimes overlooked in collection development efforts. I have been active in collecting this material for the collection at my institution. Generally these are not scientific in nature but I feel they still have significant value for researchers. Video images offer a glimpse of waterways as they are or were. While most of these focus on angling the addition information included such as the type of fish caught, their size, other wildlife seen, the water flow on the river, housing and other development along the waterways, etc. offer value today and for future researchers. In addition to videos on angling I have purchased materials on rod building, insects, the reclaiming of streams, commercial fishing, predators such as salmon sharks and on a variety of other topics.

Donations

Donations are great and we rely on them heavily. We have had great luck courting and attracting donors and have received some incredible donations. Recently we received a large donation of several thousand periodicals from the local Federation of Fly Fishers, which added new titles to our collection and helped fill in gaps in many of our existing runs. This was a bit of a complicated donation as we only used about 10-20% of what was donated but they needed to get rid of the material and we essentially agreed to take it with the caveat that it was then ours to do with as we pleased.

With donations we may need or want only a small percentage of the material that is being offered. So what do you do? Most times donors simply want to get rid of the material and do not want someone coming in and cherry picking the best items and leaving the rest. My personal opinion is that you should take it all as long as you can get the donor to agree that the items are now yours and unneeded items will be disposed of through various methods. I usually sell this as we will take the items we do not wish to add and disseminate them to other libraries or sell them to provide additional funds to purchase items we do need. So your donation is going to be used by researchers beyond our libraries walls and will provide our researchers with material beyond what you have donated. An added benefit is that we often get material that is popular in nature, within our collection development scope but not the type of material we would go out and purchase. For instance we received a donation of about 800 books from a local collector which was focused on fly tying. There were some other great items in there including an early edition of the *Complete Angler* but the bulk of material was on flies, imitating natural insects and tying flies. While this is not the focus of what we collect we added the majority of the titles and they have been very popular with local anglers and have increased the overall usage of our collection.

Courting and attracting donors is of course a key aspect to receiving donations. I am lucky because we have many anglers who come through the area and have several local guides and authors who tout our material and often bring people in for tours. I have received several donations of material and monies after people have been given a tour of our collection. Because we have so many blue ribbon rivers in the area we get a fair number of wealthy anglers who come to the area to fish and occasionally we are able to hook them as well. Demonstrating to them that the material they donate will be well cared for and well used is of vital importance. I show how we use archival grade Mylar covers, keep the room secure and control temperature and humidity. I let them know that our goal is to have this material available for future generations so that their grandchildren's grandchildren can come in and look at a book, diary or papers that they donate to us. With manuscript material in particular this is often a great selling point.

Using expert local and donor knowledge.

Beyond using dealer catalogs, random searches, and published bibliographies I also rely heavily on local researchers, professors and students to do collection development. I regularly ask them if they are aware of sources that we should have or that would be useful to them in their fields of research. Our scholar in residence, Paul Schullery has been a tremendous help in this area.

In closing I have found that my ideas about collection development change and what I have learned is that trying a new idea is usually worth it. If it doesn't work out you simply try something else.