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transforming the
global information
landscape

Transforming the Global Information Landscape

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Transforming the Global Information Landscape

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Entebbe, Uganda

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Introduction

David R. Baca IAMSLIC President 2017-18 44th Annual IAMSLIC Conference Co-Convener (with Jeanine Scaramozzino)

Entebbe, Uganda, hosted by the National Fisheries Resources Research Institute (NaFIRRI), was a special conference for many of our attendees. One, we were in Africa! The other is that we were all able to come together with our AFRIAMSLIC colleagues. We had 23 members in attendance, which allowed for some very deep interactions and discussions. We have all developed a new love and appreciation of Uganda.

The theme of the conference was *Transforming the Global Information Landscape.* We started the conference with a very productive Aquatic Commons work party, led by Sally Taylor. Many of our AFRIAMSLIC colleagues were being exposed to the resource for the first time and we made great progress on training and updating of the database. Our opening reception was on the grounds of the Imperial Botanical Beach hotel, amid the modern sounds of African music and dozens of vervet monkeys.

The Honorable Kibanzanga M. T Christopher, Minister of State for Fisheries, joined by Dr. Ambrose Agona, Director General of the National Agricultural Research Organization (NARO), warmly welcomed us to Uganda. Professor Maria Musoke, Deputy Vice Chancellor in charge of Academic Affairs of Kyambogo University, then spoke on the Management and Use of Information in a Changing Environment, highlighting issues and opportunities in Africa. Each day of the conference was opened by a keynote speaker, including Dr. Yona Buguma from NARO and Dr. Beatrice Byarugaba from the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF). Our library trends session yielded a wonderful discussion on issues confronting member libraries and gave us more insight into the enormous responsibility each of us has. We had two important reports, from Maria Kalentsits of the FAO ASFA
Secretariat and from Ian Stewart of Inter-Research. Inter-Research is a perennial supporter of IAMSLIC and the work we do.

On Tuesday we took the opportunity to visit the capitol city of Kampala. We took in some cultural sights and then had a pleasant afternoon at the Uganda Wildlife Conservation Education Centre just down the road from the hotel.

Wednesday was a busy, but fun, day. Dr. Yona Baguma, the Deputy Director General for Research at NARO opened the day. Guin auction action, always a highlight of the conference, was fast and furious. Thanks to Sally Taylor for coordinating and running the auction. After our second Executive Board meeting the group experienced a wonderful evening at the banquet held at the Imperial Royal Hotel. The food was amazing as was the local dance and music troupe, Kika. They covered traditional dances from Uganda and thoroughly entertained the audience. Our last day of the conference was full of great information on AFRIAMSLIC and the new arrangement between IAMSLIC and IODE. Olivia Diehr once again led us in visualizing our next

steps as we went back to our homes. We closed with a Welcome to Texas for the 45th IAMSLIC conference put together by Liz DeHart. The AFRIAMSLIC regional meeting, following, was very productive with important discussions on communication and the nomination of new officers.

For those that booked time for Friday we had a fascinating cruise to the source of the River Nile at Jinja with lunch being generously provided at National Fisheries Resources Research Institute (NaFIRRI). Presentations from papers specifically concerning Africa highlighted technical research of the Moroccan marine environment, the role of marine libraries in ODINAFRICA, access to marine and aquatic sciences information in the Benin Republic, the World Aquaculture Society, the Namibia Marine Date Collection and providing access to information in Malawi. The people of Uganda were exceptionally warm, friendly and welcoming. Locally we want to thank Alice Endra for all of her hard work hosting the conference. And a special thanks to Dr. Winnie Nkalubo for her tireless efforts. They were assisted Dr. Anthony Taabu Munyaho, Eva Mutongole Wamala and Simonetta Picca. Thanks also to Aggrey Isabirye for being the official photographer of the conference.

This conference would not have happened without all the hard work by the incoming President, Jeanine Scaramozzino. It is challenging to coordinate an international conference from halfway around the world but Jeanine coordinated one of the best conferences we have held. It was unfortunate that she could not attend and see the fruits of her labor. I cherish her friendship and am awed by her ability to juggle work, IAMSLIC and her busy and eventful life.

As always we want to thank Inter-Research and Ian Stewart for their unwavering support and appreciation for the work of IAMSLIC.

Succession Planning in IAMSLIC and in Aquatic and Marine Libraries

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Abstract

Some IAMSLIC members have retired, and inevitably some will be retiring soon. The organization and their libraries will soon face open positions. This study will investigate how IAMSLIC member libraries respond to the need to prepare and develop future leaders in the organization and in their libraries. The study aims to document programs or activities in team building, recruitment and selection process for leaders and managers, "growing your own" leaders, and best practices in succession planning. The study aims to determine how IAMSLIC member libraries address leadership transition and transform services and staffing. It also aims to consolidate the concerns, opinions, and suggestions on how to sustain the IAMSLIC as an organization and continue the legacy of excellent leadership and continued cooperation among members. It will investigate the willingness, interests, and potentials of members to serve on a committee and the executive board. The information gathered could serve as the basis for training and mentoring programs for future IAMSLIC leaders and library directors.

Keywords: Aquatic and marine science libraries, IAMSLIC, leadership, succession planning.

Analysis of the Documentary Information of Scientific and Technical Research of the Moroccan Marine Environment

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Abstract
Since the beginning of the first decade of this century, the Moroccan scientific and technical media scene has witnessed a great development in the production of information favored by the evolution of information and communication technologies. The modernization and equipment in communication infrastructures of Moroccan institutions specialized in the production and the diffusion of the information contributed to the radiation of the research works in marine sciences. The results of these institutions' efforts are presented in several products, in particular the portals of national institutes and documentation centers and their databases, which include their archives and archives of universities and scientific and technical institutes. This paper looks at the contribution of information and documentation systems in the creation and dissemination of Moroccan scientific and technical information in the marine environment. We will try to give a general overview of all existing Moroccan infrastructures and a detailed statistical analysis on the type of existing information, whether open source or restricted.

Keywords: Morocco, science and technology, information.

Nationwide "Publish and Read" Agreements with Publishers : The German Projekt DEAL

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Abstract
The Projekt DEAL is a consortium of German libraries, universities, and research institutions which started negotiations with the publisher Elsevier in 2016. DEAL wants to set up nationwide "publish and read" agreements with publishers. By paying a lump sum to cover publication costs, all papers authored by researchers from German institutions would be published open access. This new payment model would certainly have a global impact. Besides Elsevier, there are ongoing negotiations with the publishers SpringerNature and Wiley. We will explain the recent developments and open access initiatives, and discuss whether DEAL could be a model for other IAMSLIC libraries.

Keywords: Projekt DEAL, nationwide agreement, consortium, open access, business model.

The goal of Projekt DEAL is to conclude nationwide licensing agreements for the entire portfolio of electronic journals from major academic publishers (Projekt DEAL, 2018). Elsevier, SpringerNature and Wiley were identified as potential publishers.

Project Structure

https://www.projekt-deal.de/about-deal/

Figure 1. Structure of Projekt DEAL.

Projekt DEAL was initiated by the Alliance of Science Organizations in Germany in 2015. Projekt DEAL is a consortium of German libraries, universities, universities of applied sciences, and

research institutions, as well as state libraries. To carry out the project, the Alliance has brought together a **project team** including relevant experts from universities and other institutions. The group will be piloted by a **project steering committee. The negotiation group is responsible for negotiations with the publishers.**

What is Special about Projekt DEAL?
Nationwide licensing agreements are not new, but what is special about DEAL is the goal to provide "publish and read" agreements. The DEAL consortium members want to establish a new payment model. The pricing should be based on the publishing output of the member institutions, and calculated with an adequate APC, independent of the number of accessible journals.

- **PUBLISH component**: By paying for the publishing output of their scientists, the institutions obtain access to the entire e-journal portfolio of the publisher.
- **READ component**: Furthermore, and maybe the most critical requirement, is that all articles by German based scientists become open access immediately upon publication.

Why Has Projekt DEAL Been Initiated? Why Do We Participate in Projekt DEAL?
Projekt DEAL is embedded in the open access movement. Projekt DEAL is a consequence of both the increasing subscription costs and the progressive open access movement within the last 10 years. Subscription costs have become too expensive and the consortium members are not willing to accept the pricing policy anymore. Only a consortium may be able to obtain a significant change in academic publishing by pushing the publishers to agree to the DEAL's licensing model.

To understand the project idea and DEAL members' demands, it is important to look at the researchers' intentions as well as at hybrid open access. The researcher is in a "publish or perish" situation. It is important for their scientific carrier to publish their findings. Furthermore, the prestige of the journal is crucial. Well-established prestigious journals are first choice for publishing, but the majority of these journals are subscription-based. Notwithstanding, researchers want their articles open access. Publishers have reacted by offering hybrid open access. Several years ago Springer, Wiley and Elsevier launched hybrid journals and the number of hybrid open access articles has increased. Hybrid Open Access describes a publishing model where some articles are made openly available, while other articles remain closed access, and the journal as a whole subscription-based (Rettberg, 2018). Double dipping means the publisher charges fees twice, once through Articles Processing Charges, and secondly by subscription fees. Double dipping cannot be accepted by public funded German academic institutions. The IOW does not fund APC for hybrid open access. The European Commission (EC) announced that, starting with their new funding programme, Horizon Europe, they will no longer reimburse publication fees for hybrid Open Access.

Content and subscription costs of hybrid journals

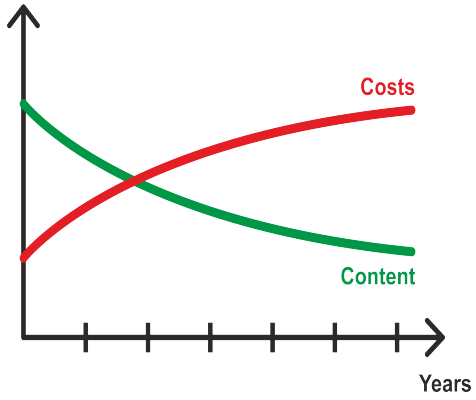

Figure 2. Content and subscription costs of hybrid journals.

The subscription costs are increasing and while the part we need to pay for reading is decreasing, due to the increasing number of hybrid open access articles, there has not been any offset yet. This is one reason for Projekt DEAL.

Timeframe

2014	Preparation
2015	Establishing the project structure Selecting publishers Obtaining negotiation mandates Analysing data
2016	Establishing of the consortium DEAL Start of negotiations with Elsevier
IOW cancelled all Elsevier's journal subscriptions	
2017	January: DEAL's consortium members lost access to Elsevier journals February: Elsevier restored access free of charge -> "Big bang" failed
	Start of negotiations with SpringerNature and Wiley
2018	July: Negotiations with Elsevier have been suspended

Figure 3. Timeframe: (Schäffler, 2017) see https://www.projekt-deal.de/zeitplan/

The present situation is unpleasant. Negotiations with Elsevier have been suspended. Since summer 2018 our institution has had no access to Elsevier's journal content published in 2017 and 2018. At present we are offering our scientists access through inter-library loans. Other oceanographic libraries are still on multi-year contracts. The situation will be different soon, when nearly all German academic institutions will lose access. The access to archive was not covered by IOW subscription agreement.

Potential Improvements

Involve the scientists. Talk to and communicate with researchers. They are readers, authors, and editors. Find an appropriate way to explain the aims of Projekt DEAL do it before canceling subscriptions. The lack of information has caused a lack of understanding by our scientists.

Acknowledgements

I would sincerely like to thank IAMSLIC and Bibliothek International for partially funding my conference participation.

References

Projekt DEAL. (2018). Projekt DEAL: Bundesweite Lizenzierung von Angeboten großer Wissenschaftsverlage. Retrieved from https://www.projekt-deal.de/

Rettberg, N. (2018). The worst of both worlds: Hybrid Open Access. Blog Retrieved from https://www.openaire.eu/blogs/the-worst-of-both-worlds-hybrid-open-access

Schäffler, H. (2017). *Germany and Open Access: The DEAL Project.* Paper presented at the European ICOLC, Prague (15-18 October 2017), Prague.

Contributions of Marine Libraries in ODINAFRICA to Oceanogrphic Research: IMROP Researchers

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Abstract

In marine information management, THE ODINAFRICA project participated in training librarians, the creation of a pan-African network of National Oceanographic Data Center (NODC), product development and targeted services for national and regional end users. Currently, over 40 marine-related institutions in 25 African countries including Mauritania have tried to address the challenges faced in access to data and information for coastal management. NODC of Mauritania was established in 2001 under the responsibility of the Mauritanian Institute of Oceanographic Research and Fisheries (IMROP). IMROP has developed several products and services such as ODINAFRICA NODC, project websites, newsletters and brochures, ocean data catalogues (metadata), library catalogues, and directories of experts and institutions. IMROP's librarians also participated in several training sessions on the management of marine information. This paper discusses the project's achievements. A questionnaire was administered to 20 IMROP researchers about their use of products and services and to plan for the maintenance of the various services and databases.

Keywords : ODINAFRICA, libraries, Mauritania, IMROP, library services, marine information management, west Africa.

Introduction

The Ocean Data and Information Network for Africa (ODINAFRICA - http://www.odinafrica.org/) has been one of the most successful projects of the International Oceanographic Data and Information Exchange Programme (IODE) of the Intergovernmental Oceanographic Commission of UNESCO (IOC). The Ocean Data and Information Network for Africa (ODINAFRICA) brings together more than 40 marine related institutions from 25 countries in Africa (below) to address the challenges faced in accessing data and information for coastal management. With the support of the Intergovernmental Oceanographic Commission of UNESCO and the Government of Flanders (Kingdom of Belgium) the network strives to address the challenges faced in ensuring that ocean and coastal data and information generated in national, regional and global programs are readily available to a wide range of users in an easily understandable format. The focus of the current phase of the project is strengthening the pan-African network of National Oceanographic Data Centre (NODCs), and marine related institutions, as a sustained mechanism for application of data, information and products in marine and coastal management in Africa. This includes the development of linkages with data generators (including ongoing large-scale projects on the African coasts) and the development of targeted products and services for national and regional end users.

Ocean Data Collections and Catalogues (Metadatabases)
National data collections were developed. These consisted of ocean station data (from global and local sources), satellite analyses, ocean climatologies, weather climatologies, geology, base mapping, ecology, fisheries. The institutions participating in ODINAFRICA have been provided with a data CD containing data from the IOCEA and IOCWIO regions obtained from other IODE data centers around the world. In addition, a program to identify, digitize and repatriate other datasets which are available in foreign institutions to the regions was implemented in the framework of GODAR. Several ODINAFRICA NODCs published their National Marine Database collections on CD-ROMs and other media. A catalogue of datasets can also be accessed through a central GeoNetwork server located at: http://geonetwork.iode.org/geonetworkAMA.

Sea Level Data Collection
The African network for measurements and monitoring of sea level was expanded and upgraded by installing new tide gauges in Cameroon, Congo, Djibouti, Egypt, Ghana, and Mauritania. The installation of Global Navigations Satellite Systems – GNSS receivers - at the sea level stations in Takoradi (Ghana), and Inhambane and Pemba (Mozambique) provides the connection between the horizontal and the vertical data at these locations. The tidal and GNSS observations together allows one to monitor crustal motions at the tide gauge locations in order to derive absolute or climate related signals in mean sea level from the tide records. Experts from the African countries used the training provided to analyze data from the sea level stations around Africa and prepare tidal predictions. Information on the network (equipment types and location, reports, trainings, etc.) is available on the African Sea Level Network website (http://sealevel.odinafrica.org/), while the data from the stations can be accessed near-real time at www.sealevelstations.net. Thanks to the combined efforts of GLOSS, IOC/tsunami and ODINAFRICA, Africa now has a network of 40 sea level stations.

Coastal and Marine Atlases
The African Coastal and Marine Atlas (www.africanmarineatlas.net) was initiated as a continental-scale online resource of public domain geospatial data. The project was designed to identify, collect and organize datasets into an atlas of biophysical themes, including base maps, geosphere, hydrosphere, atmosphere, biosphere and the human and built environment. A second aim was to provide training to increase the use of Geographic Information Systems (GIS) and spatial data products for the dissemination of appropriate, timely and relevant information. The inventory of data sets in the atlas is also a useful indicator of gaps, either in the knowledge base or the availability of the data in the public domain. The Coastal and Marine Atlases currently have more than 3,500 maps for different features from the coastal areas of 20 countries. Five regional atlases have also been developed for the Large Marine Ecosystem regions as follows: Agulhas and Somali Current, Benguela Current, Canary Current, Guinea Current, and the Mediterranean and Red Sea regions. The national and regional atlases can be accessed at: www.africanmarineatlas.org.

African Register of Marine Species
The contribution of the African institutions to the Ocean Biogeographic Information System (OBIS) and the World Register of Marine Species (WoRMS) was improved considerably through

the organization of focused workshops during which experts from ODINAFRICA institutions in Africa developed databases on marine mollusks, sponges, and decapods. The work formed the basis for creation of the African Register of Marine AfReMaS (http://www.marinespecies.org/afremas/Species), which already had more than 24,300 entries as of the end of August 2013. Some of the institutions have made progress in developing national marine biodiversity databases and making them available online or through the AfrOBIS node, which is one of the global nodes of OBIS. A project to digitize marine biodiversity data collected in the Gulf of Guinea (in particular national waters of Guinea) by ex-Soviet Union research vessels was implemented and the data generated was included in OBIS.

Marine Mammal Survey

Three ship-based visual surveys of the temporal and spatial distribution of marine mammals in the CCLME region were undertaken during the FAO/CCLME fisheries research cruises off the Northwest African in 2012-2013 on board the R/V Fridtjof Nansen using the following methodology: (a) collection of marine mammal sighting data including number of sightings per species, observer data and relative densities using standard data sampling protocols; (b) Recording of the following parameters: species, GPS position, data/time, bearing /radial distance reaction to vessel, group size, behavior, any cutaneous diseases, associated species, habitat data, voucher photos; and (c) Evaluation of the marine mammal biodiversity, distribution, relative density, seasonality aspects, health status in relation to habitat/oceanography and historical insights from the literature. Training and equipment were provided to marine biologists from the region during these surveys. The data collected have been used to enrich the OBIS database.

Document Repositories

The institutions participating in ODINAFRICA have participated in the development of a database of publications about marine and freshwater science in Africa (OceanDocs - Africa). The repository now has more than 2,500 records from Africa. These publications include books, journal articles, technical reports, theses, etc. The African records in the repository can be accessed at OceanDocs - AFRICA.

Literature Catalogues

ODINAFRICA aims at making library materials in the marine science libraries in Africa accessible locally through the creation of a collective catalogue of co-operating institutes' library holdings. The databases were initially developed using the INMAGIC software. This was later converted to AgriOcean/DSpace and ABCD. The national catalogues were merged into a union catalogue and accessed online briefly - www.afrilib.odinafrica.org. ODINAFRICA also supported the development of an African Union list of Journals from information centers. The list, which currently has nearly 800 serial holdings, can be accessed through the IAMSLIC website: http://www.iamslic.org/unionlist/africa/index.php**.** ODINAFRICA also initiated the development of a Catalogue of Aquatic and Fisheries Publications from/about Africa, with more than 6000 records.

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and local sources), satellite analyses, ocean climatologies, weather climatologies, geology, base mapping, ecology, fisheries. The institutions participating in ODINAFRICA have been provided with a data CD containing data from the IOCEA and IOCWIO regions obtained from other IODE data centers around the world. In addition a program to identify, digitize and repatriate other datasets that are available in foreign institutions to the regions was implemented in the framework of GODAR. Several ODINAFRICA NODCs published their National Marine Database collections on CD-ROMs and other media. A catalogue of data sets can also be accessed through a central GeoNetwork server located at: www.geonetwork.iode.org/geonetworkAMA.

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- Training and equipment was provided to marine biologists from the region during these surveys. The data collected have been used to enrich the OBIS database.

Services of the IMROP Library

The IMROP library's main missions are to support the demand of the researchers. It manages the documentary research and contributes to a better knowledge of the scientific and technical results of the Institute through the management and development of the library: enrichment of the collections through the acquisition of new books; modernization of the library to facilitate the work of users; and training in the use of computer software.

The services implement actions to disseminate scientific and technical information in various forms, including the regular publication of newsletters and newsletters, as well as the organization of scientific events (meetings, symposiums) and the training of users in the use of documentary software.

- Treat, store, produce, disseminate and disseminate scientific information in response to the needs of scientists, administrations, professionals and the general public;
- Development and management of collections and document databases;
- Modernization of the archiving and reception structures of the library;
- Reinforcement of the editorial production of the institute (infographic achievements and production of scientific or popularized documents);
- Institutional communication development of IMROP;
- Participation in exhibitions and organization of events (conferences, symposia, gate days).

Management and Development of the Library

Scientific information development management aims to ensure the management and development of the library in terms of acquisition, organization and dissemination of scientific and technical information; enriching the documentary stock by acquiring new books; and modernization of the library to facilitate the work of users.

Goal of the Study

The goal of the study is to measure users' satisfaction with the services offered by the center as part of the ODINAFRICA project and to analyze the impact of the ODINAFRICA project in the development of oceanographic research and fisheries in Mauritania. The questionnaire was administered at the headquarters of IMROP. All laboratories were visited and the questionnaire was administered from March 10 to May 25, 2017.

Population and Size of Study

Since IMROP is an interdisciplinary institution, researchers specialize in the disciplines of ecology, biology, chemistry-microbiology, oceanography, stock assessment, socio- anthropology. The study population corresponded to all of the institute's researchers and users of the library. The starting sample size was all IMROP researchers representing 110 people. We were able to interview only 63 researchers in Nouadhibou because they travel frequently. Some of them are also in training, internship or seconded in Nouakchott. The researchers are from :

- The Laboratory of Assessment of Living and Aquatic Resources (LERVA);
- The Laboratory Biology and Ecology of Aquatic Organisms (LBEOA);
- The Laboratory of Social and Economic Studies (LESE);
- The Laboratory of Marine and Coastal Studies (LEMMC);
- The Statistical Service (SS);
- The Documentation and Scientific Information Center (CDI).

The average duration of the interview was approximately 15 minutes.

Research Methodology

We wanted to cover all the research areas of the scientists to have a good representation of the different opinions on the different services offered by the institute's documentation center thanks to the ODINAFRICA project. To measure user satisfaction with the services offered by the center as part of the Odinafrica project we use a survey to analyze user behavior, their motivations for use and practices, their attitude towards the services offered, their expectations and knowledge of the constraints of the services offered.

Results

The survey shows that IMROP researchers use more Marine Info Products & Services (Bibliographic Search Services), the Literature Catalogs, which represents 30% of the terms of use of services, offered under the ODINAFRICA project. The repositories and OceanDocs that represent the scanned documents respectively occupy 12 and 13% of the answers. Other services include the Document Request, the ODINAFRICA Projects Database and the Ocean Data Collection & Services (Ocean Data Collections and Catalogs), the Sea Level Data Collection, the Coastal and Marine Atlases, the African Register of Marine Species, Marine Mammal Survey. That represents very low utilization rates between 8 and 3%.

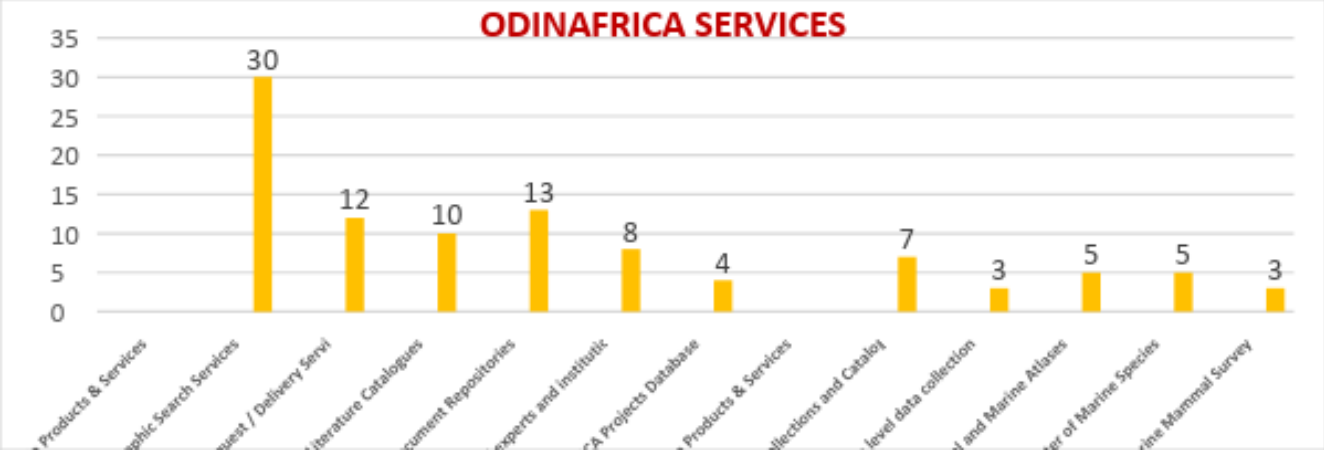

Figure 1. Odinafrica services.

Contribution to Research Improvement in IMROP

By looking at the use of services by research area, we see that the Laboratory Biology and Ecology of Aquatic Organisms (LBEOA) makes much more use of the services offered by the Odinafrica project with 27% use, followed by the Laboratory of Assessment of Living and Aquatic Resources (LERVA) with 18% use and Laboratory of Marine and Coastal Studies (LEMMC) with 16% use. The (LESE) uses 13% and the Statistical Service (SS) 7% the laboratories seem less to take advantage of the information available and developed in its fields in the Odinafrica project.

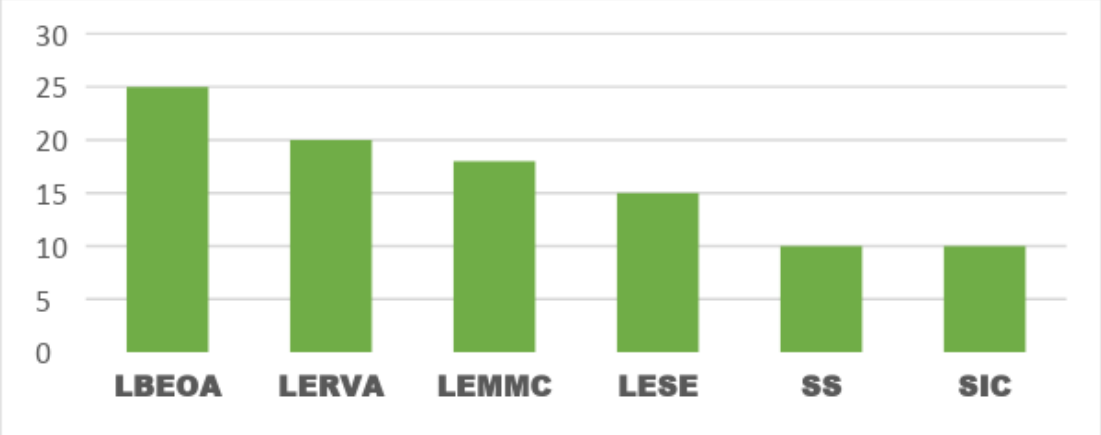

Figure 2. Contribution to the training and improvements of researchers by institutions.

The services enabled several IMROP scientists to finish their training courses. 18% of respondents say they used the services to do their doctoral training. 39% claim to have used the services they have been able to do their masters training, 23 to use the services as part of their degree-level training and 5% used the services to train in DEUG. IMROP scientists to complete their training as part of self-study also used the services.

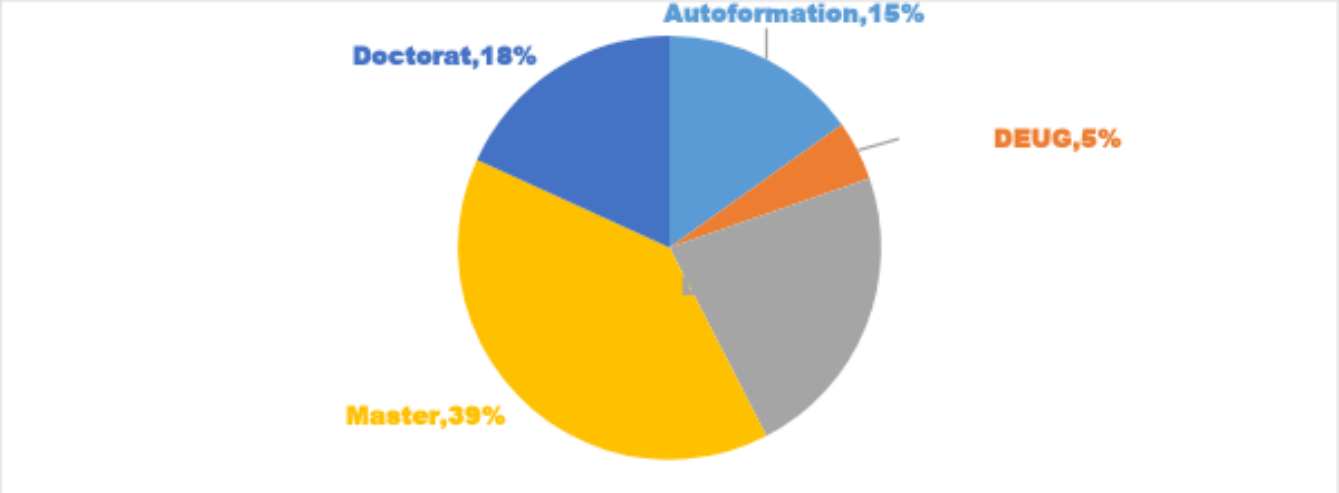

Figure 3. Contribution to the training and improvements of researchers.

Contribution to Scientific Production

The questionnaire also revealed that IMROP researchers are using the services developed under the Odinafrica project. 30% of the services provided provided technical advice on fisheries management and fisheries management, 25% of them claim to use available resource materials to repair technical reports, to prepare technical reports. 15% of researchers say they have used documentary resources in the writing of scientific articles, 20% of researchers say they have produced scientific posters using data from the Odinafrica project and 10% for conference papers. 34% of them said they were satisfied with the services developed under the Odinafrica project, 20% are moderately satisfied and 9% seem not to be satisfied with the services developed or have never used the services. Overall, the Odinafrica project is recognized by most of the interviewees as a project that has provided researchers with important information in oceanographers, marine scientists and fisheries. His information was very much involved in carrying out research action at IMROP.

However, the analysis also shows that many researchers seem to be unaware of the diversity of sources of information available in the project. Some also for technical reasons including access to broadband internet could not take advantage of these sources of information.

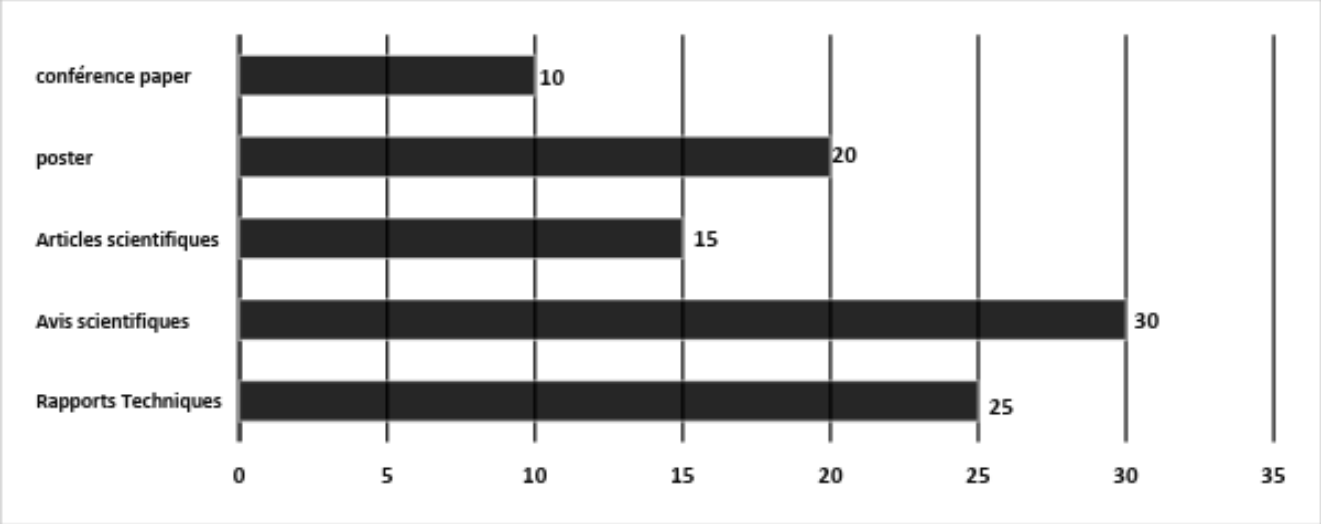

Figure 4. Contribution to scientific production.

Conclusion

The ODINAFRICA project has participated extensively in the development of oceanographic research and fisheries in West Africa and mainly in Mauritania by setting up a library, provision of scientific information, giving grant of scientific equipment (computers, tide gauges, etc.), training of scientists and the development of oceanographic research in West Africa.

Some obstacles have been identified which constitute obstacles to the use of the documentary resources produced by the Odinafrica project. We can notice some obstacles for researchers to take advantage of the various services offered by the project through IODE. Many researchers also do not know very well the services offered. The Data and information managers involve in the Odinafrica project have a lot of outreach work to do to inform them of the possibilities offered and the available documentary resources to enable researchers to benefit from them in the course of their research.

Access to Marine and Aquatic Sciences Information in Benin Republic

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Abstract

Information production in our societies is getting more and more expansive. In Benin Republic, marine and aquatic information is produced by many organizations such as Benin Fisheries and Oceanologic Research Institute (IRHOB), Fishery Production Office, Cotonou Port Authority, some laboratories of Abomey-Calavi University, etc. Many of these institutions are working at the national level. The ODINAFRICA program national network was created on the lead of IRHOB. This network is still working today. With the functioning of these institutions, it is clear that a lot of information is being collected on different topics within the domain. All coastal and marine information is being sharing through this network and among all stakeholder and policy decision makers. Regarding the growing information needs of actors in the domain, what do we do to meet the needs of each information seeker? This paper describes tactics used by the library of Benin Institute for Halieutic and Oceanographic Research (IRHOB) not only to follow the national rhythm of information production in the field but also to provide its users with the appropriate information. A lot of information can be found on IRHOB's website: www.nodc-benin.org

Keywords: Benin, marine and aquatic sciences, information access.

Introduction

Oceans and rivers are natural resources that play significant roles in the global population's food security and the development of domestic economy. Fisheries contribute to livelihoods, employment and income with particular importance in coastal communities in developing countries. Around 56 million people are directly employed in fisheries and aquaculture and some 200 along the value chain (FAO).

Oceans and rivers are huge economic development assets for nations. They play preponderant roles in international relations in terms of transports, exportation, importation, tourism and industry. Maritime transport is the bedrock of many national economic activities. It provides raw materials for countries' industrial functioning and ensures the distribution of products or goods emerging from industries. Maritime transport also leads to other means of transport. We have been able to utilize cars, trains and airplanes to carry goods from their manufacturing places through the sea. Rivers also facilitate populations' mobility and fuel economic growth. In Nigeria, for instance, ferry services from mile 2 Apapa and/ or to CMS reduces traffic-jams on road transportation and the slowing down of economic activities.

Oceans and rivers rank among major tourist destinations in the world. They welcome tourists

who come either to cruise them or to sojourn on their beaches. In Benin for instance, places like la Bouche du Roy, an outfall between the Atlantic Ocean and Lake Mono in Grand-Popo and Ganvié, a lacustrine village on lake Nokoué, are invaded by thousands of tourists coming from diverse places every year. These activities contribute highly to the economic growth of Benin. In Nigeria, tourism which maritime transport enhances and facilitates is an avenue through which the states and the federal governments realize revenue that is then channeled to developmental projects. For instance, the Lagos State Government gets substantial revenue per annum from users of beaches like Eleko, Lekki and Taqua Bay. The hospitality business it has encouraged has also made it possible for guest houses, hotels and resort centers which provide employment, as well as rest and entertainment facilities for tourists and others.

Some nations have heavy ocean-based industrial activities. Those activities include sea fishing, oil refinery, energy production, etc.

The fisheries sector occupies a very important place in the socioeconomic development of Benin Republic. It has been recognized as a powerful income and employment generator as it stimulates the growth of a number of subsidiary industries. In countries like Angola, the industrial fishery sector is controlled by Europeans, Chinese, and Koreans. In 2009, the production reached 190, 083 tonnes (FAO Fishstat). The revenues are estimated at 217 millions of US Dollars.

Daily, thousands of barrels of crude oil are produced by offshore petroleum refineries in the world. According to *Oil and Gas Journal*, in the world a total of 636 refineries were operated on the 31 December 2014 for a total capacity of 87.75 million barrels. Engines or mechanical equipment are installed in the sea for energy production. Many policies are then being developed in various countries in the world to cover electricity needs. For example, Greece established wave energy exploitation in the north Aegean in order to guarantee that its numerous isolated islands in the region have access to electricity.

Thanks to ocean and river resources, life has become easier. But anthropic actions are harmful to the marine ecosystem and are source of many other problems. Marine and aquatic species as well as human beings are threatened because of climate change and some fishing practices. Emissions from human activities are changing the ocean's chemistry and temperature. Emissions of carbon dioxide and other greenhouse gases are disrupting oceans conditions and jeopardizing the future of the essential food resources we receive from the oceans. They may reduce the amount of wild caught seafood that can be supplied by the oceans and also redistribute species, changing the locations at which seafood can be caught. Other causes of disruption are oil spills from the wrecks of oil tankers. This situation is harmful to the global population because of their dependence on seafoods. Fish and seafood are a primary source of protein for more than one billion of the poorest people on earth. However, these products are getting rare and the global seafood demand is expected to rise by 2050.

These last years, many building and social infrastructures (houses, roads, hotels, etc.) have been destroyed by coastal erosion. This phenomenon is the result of negative effects of human activities on the marine ecosystem. Piracy disturbs the smooth running of economic activities on the sea.

In regard to consequences originating from human activities on sea and river, a series of actions have been undertaken either to slacken damages or to prevent their occurrence. These actions are conducted by different institutions that handle the catastrophic impacts on sea and rivers (pollution, climate change, fish stock rarity or decline, etc.), security and legal issues. They produce information and also need data to make a decision or solve a problem. Actions need to be taken to monitor information growth and ensure its availability. This paper aims at sharing the strategy used at Benin Institute for Halieutic and Oceanographic Research (IRHOB) to follow the rhythm of information production in marine and aquatic sciences in Benin.

Aquatic and Marine Sciences Institutions in Benin

1. Benin Institute for Halieutic and Oceanographic Research (IRHOB)

Known as 'National Oceanographic Committee,' IRHOB was created in 1988 to guarantee the sustainability of marine and lagoon resources. Its objective is to contribute to the effective management of living and non-living aquatic resources in Benin. In term of missions, the responsibilities of this institution are multiple. These responsibilities involve the elaboration of the national fisheries and ocean research programs and ensuring their coordination, implementation and control; the identification of problems whose resolution requires research and training in the field of marine sciences and adjacent coastal areas; the centralization of data; the promotion of the exchange, publication and dissemination of fishery and ocean research results; participation in the elaboration and implementation of regional and international fisheries and ocean research programs consistent with Benin national development goals; research, production, expertise or advice in the respective domains of public and private partners; and contributions to the training and promotion of researchers in marine sciences.

As a research institute, this institution carries out many activities. The most visible are:

- The monitoring of physico-chemical parameters of Benin's marine and coastal waters ;
- The study of the coastal dynamic of Benin littoral ;
- The fish stock assessment through statistics in collaboration with FAO ;
- The demersal fish stock assessment under the aegis of the West African Monetary and Economic Union (UEMOA) in both state members countries and neighboring ones;
- The study of climate and ocean circulation in the Gulf of Guinea (EGEE) within the framework of the International AMMA Program (Multidisciplinary Analysis of the African Monsoon) from 2005 to 2007 ;
- The regional Program of physical oceanography in west Africa (PROPAO) ;
- The creation of a network for coastal measures ;
- The creation of a coastal data bank (temperature, salinity…) and meteorological data accessible on our web site www.nodc-benin.org;
- The supervision of interns and students for their dissertations ;
- The analysis and modeling of the coastal environment, coastal erosion, sea level, sedimentary transport, winds and currents.

Oceans, rivers, etc. and their resources rank among the number one priorities of nations. In Benin Republic, many other institutions deal with oceanographic and lacustrine issues. Some are data producers while others are data users or consumers.

Figure 1. Retrieving beach seine at Cotonou beach by artisinal fishermen.

Figure 2. Sperm whale (seen from front) at the Port of Cotonou.

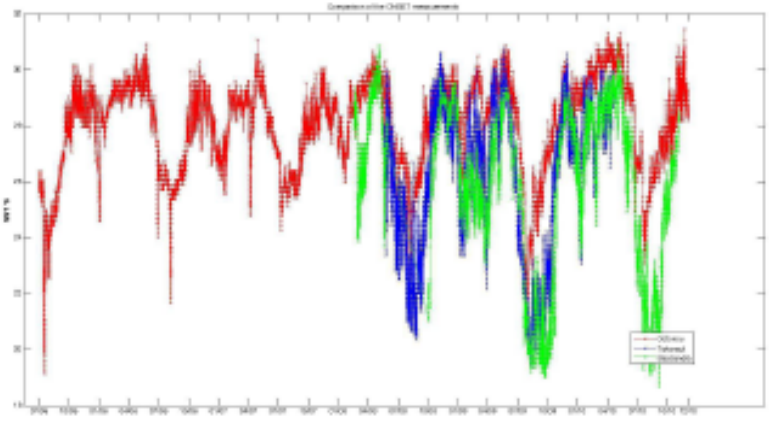

Figure 3. Sea surface evolution 2005-2017.

Figure 4. Data collection on the beach.

Other Organizations in Aquatic and Marine Science in Benin

- Direction of Fisheries Production (DPH)
- Cotonou's Port Direction (PAC)
- Maritime Prefect
- Direction of the Merchant Marine (DMM)
- National Institute of Geography (IGN)
- National Center of Remote sensing (CENATEL)
- Direction of Environment and Climate (DGEC)
- National Direction of Water (DGEau)
- National Direction of Mines
- National Institute of Statistics and Economic Analysis (INSAE)
- Safety Agency for Air Navigation in Africa (ASECNA)
- National Meteorological Agency (ANM)
- University of Abomey-Calavi
- The International Chair in Mathematical Physics and Applications (CIPMA-Chaire UNESCO)
- Laboratory of Applied Ecology (LEA)
- Wetland Research Laboratory (LRZH)
- National Institute of Water (INE)
- Non-Governmental Organizations

Information Production in Aquatic and Marine Research in Benin

As one can see, the production of information in the domain is important in regard to the number of institutions that control the sector. Some organizations like ''Safety Agency for Air Navigation in Africa (ASECNA), General Direction of Cotonou's Port, etc. need information for the smooth running of their activities. Other organizations like IRHOB, and the International Chair in Mathematical Physics and Applications (CIPMA – Chair UNESCO), etc. that are research institutes produce and consume marine and aquatic data. These data are produced in their activities to train, diagnose, prevent or identify sustainable solutions in the field. The immediate consequence of information production is "infobesity," characterized by the incapacity to follow the rhythm of production. This really affects the information access process in Benin. In fact, in this library, information access needs originate from researchers composed of teachers, students and national organizations dependent on environmental, lacustrine and oceanographic data. Those requests sometimes are not easy to satisfy due to unavailability. It is then a challenge, for if we consider that big data are generated by many national organizations, we should be able to build a repository of what is produced, so as to ensure their access in short and long run.

This is what made the library of IRHOB to devise its *''legal deposit''* strategy. The strategy consists in following the national rhythm of aquatic and oceanographic information. The strategy consists of three essentials: Data centralization, partnership with universities and other organizations and international access.

- **Data centralization**

The method here is to concentrate all the research findings of IRHOB. With this strategy, the library updates the institution data and makes them available to users. Some of these data can be accessible online while others are available in print format. Documents in print format are the following:

- Directories of researchers and institutions in marine and coastal sciences;
- Bathymetry of the channel, lake Nokoué, lake Ahémé, and its channels and part of the ocean;
- National and regional marine and coastal atlas;
- Marine fish atlas of commercial interest;
- Digitized Map of Benin continental shelf;
- Several thematic maps on the parameters of the marine and coastal environment;
- Several publications, fact sheets and thematic posters ; etc.

Online data can be found on IRHOB's website: www.nodc-benin.org.

- **Partnerships with Universities and Other Organizations**

The partnerships with academic institutions and other organizations aim at collecting documents (thesis, articles, reports, and other grey literature) produced by lecturers, teachers, researchers, etc. This measure enables the gathering of national academic resources on aquatic and marine sciences. These data are often used by students for academic purposes. This has been possible thank to a partnership signed between IRHOB and academic institutions, organizations dealing with ocean and aquatic issues.

- **Access to International Data**

IRHOB Library patrons can access international aquatic and marine science resources through the program AGORA which is one of the fifth scientific and technical databases of the program Research4life. It is coordinated by the Food and Agricultural Organization (FAO) and aims at reducing knowledge gap between northern and southern countries. It provides free online access to more than 10,000 reviews and 26,000 books in many disciplines such as: agriculture, veterinary science, biology, biotechnology, chemestry, ecology, environment sciences, natural resources, fishing, aquatic sciences, etc. other sources like RAMSAR Convention.

Conclusion

Whatever the field may be, information availability is vital for the smooth running of human activities. This paper discussed strategies used at Benin Institute for Halieutic and Oceanographic Research (IRHOB) to provide access to aquatic and marine sciences information in Benin.

References

Nazery Khalid, Margaret Ang & Zuliatini Md Joni. 2009. *The Importance of the Marine Sector in Socio-economic Development: A South East Asia Perspective*. Maritime Institute of Malaysia MIMA), 32 p.

Ministerial Conference on Fisheries Cooperation among African States Bordering the Atlantic Ocean. Synthèse de l'étude sur les industries des pêches et de l'aquaculture Angola.

Jolly, Claire. 2016. The Ocean economy in 2030. Workshop on maritime cluster and Global Challenges 50th anniversary of the WP6. 1 December 2016.

International Maritime Organisation. Renforcement de la sûreté maritime en Afrique de l'Ouest et du Centre.

Ocean-based food security threatened in a high CO2 World. A Ranking of Nations' Vulnerability to Climate Change and Ocean Acidification.

Namibia Marine Data Collection

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Abstract
The paper gave an overview of how the National Marine Information Research Centre (NatMIRC) collects its data and the functions of such data. This included brief descriptions of data collecting techniques used or applied by NatMIRC scientists and the processes involved in transforming such data into information, and the functions and roles of such information thereafter.

Keywords: Benin, libraries, NatMIRC, data collection.

Development and Introduction to the New Website Project

of the Regional Group of IAMSLIC for Africa - AFRIAMSLIC

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Abstract
AFRIAMSLIC is the regional group of the International Association of Aquatic and Marine Science Libraries and Information Centers (IAMSLIC) for Africa. IAMSLIC provides a forum for sharing ideas and resources within the various aquatic and marine science disciplines. IAMSLIC has six regional groups: AFRIAMLIC, Cyamus, EURASLIC, Grupo Regional Latinoamericano, Pacific Islands, and SAIL. AFRIAMSLIC aims to exchange and explore ideas and issues of mutual concern through cooperation within Africa and to build strong links with other national, regional and international aquatic and marine science libraries and information networks.

To enhance communication and resources sharing among members of the group and increase better access to information resources, an AFRIAMSLIC website will be developed under WordPress and hosted by IAMSLIC. The basic framework of the website is already created. The next steps will be the configuration and customization of the site as well as addition of new contents. The paper will report on the success and the challenges in the development of the website. The IAMSLIC conference in UGANDA in October 2018 will be used as an opportunity to introduce the new website.

Keywords: Aquatic and marine science, Africa, IAMSLIC, AFRIANSLIC, websites.

Digital Access to Research:
Prospects of the Technology Bank Project of the United Nations

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Abstract
In 2016, the United Nations General Assembly officially established the Technology Bank Project aimed at supporting and strengthening Science, Technology and Innovations (STI) in selected Least Developed Countries (LDCs). The focus area of the project was to promote digital access to research and technology in LDCs. Working in partnership with research4life, a partnership of 5 UN agencies (WHO, FAO, WIPO, ILO, UNEP), highly rated science publishers, Cornell and Yale Universities, that have been providing free access to global academic research through the five research4life programmes, as well as in collaboration with the Uganda Focal Persons, the Technology Bank aims to achieve its objective. The DAR (Digital Access to Resources) activities of the Technology Bank started in September 2018, in Uganda. The activities were then officially launched in a workshop at Uganda Christian University (UCU) on the 7th of November 2018. Subsequent activities and workshops were held in which the project reached out to many researchers and institutions. This paper, therefore, presents a summary of DAR activities and their spread within the country until December 2018.

Keywords: Digital access to research; Technology Bank; Research4Life, research, innovation, STI, Uganda.

Background to Technology Bank and Digital Access to Research (DAR)

In 2011, the Istanbul Programme of Action called for the establishment of a technology bank dedicated to least developed countries, a long-standing priority of the LDCs confirmed in the 2015 Addis Ababa Action Agenda and in Sustainable Development Goal 17 (UN-OHRLLS, 2019).

The Council of the Technology Bank of the United Nations (UN) adopted the programme of work focusing on the Technology Bank in collaboration with other UN entities. This adoption followed a feasibility study that realized the major benefit it would have towards the development of research in the LDCs (United Nations, n.d.). On 23 December 2016 the United Nations General Assembly officially established the Technology Bank (New, 2017; UN-OHRLLS, 2019), and operationalized on 22nd September 2017. The Technology Bank aims at strengthening the science, technology and innovation capacity of the world's 47 LDCs (United Nations, 2017).The Technology Bank's digital access to research activities build on the substantial existing national scientific and technical information access and information expertise, to foster and further enhance national capabilities, and also to promote eventual South-South collaboration.

The Technology Bank joins Research4Life, a public private partnership active in more than 100 low- and middle-income countries, including all the LDCs, since 2002 as a new UN partner ("Technology Bank for the Least Developed Countries : budget and programme of work for 2018," 2018). Through the DAR activities, the Technology Bank builds on what Research4Life has so far accomplished, and generate results for the LDCs, which have been out of reach to date. Research4Life has proven that online access to the world's high quality published scientific and technical information (STP) is possible in all the LDCs, although not without hurdles that need to be overcome. Through the DAR activities, the Technology Bank aims at ensuring that the LDCs make the best possible use of this access ("Technology Bank for the Least Developed Countries: budget and programme of work for 2018," 2018).

Digital Access to Research (DAR) in Uganda

Digital Access to Research (DAR) Technology Bank of the United Nations activities commenced in September 2018 with virtual meetings with the Country Coordinator, mapping out activities and the way forward. Activities planned included outreach, meetings, workshops and conferences.

Several meetings were held with various research support bodies within the country. On 28th September, a meeting with the Executive Secretary for Inter-University Council for East Africa (IUCEA), Prof. Lyambabaje Alexandre. At the meeting, Prof. Lyambabaje was invited to be a keynote speaker at the Launch of the DAR Technology Bank of United Nations Project at Uganda Christian University, Mukono. He was ably represented by Dr. Phillip Ayoo, the Principal innovation and outreach officer. On same day, IUCEA was registered for Rsearch4life. The Executive Secretary requested for a memorandum of understanding to collaborate with the Technology Bank Project.

While at Mbarara the DAR team reached out to two more organizations/institutions;

1. University of St. Joseph: This is a newly established Catholic University. The visit to this university saw the team having a briefing from the Manager, Quality Assurance, the Deputy Vice Chancellor Academic Affairs and the Academic Registrar. The aim was to lay strategies for future collaborations and involvement in DAR activities.
2. CAMTECH Uganda: This is a centre for innovations at Mbarara University. Their mandate is to nurture innovators and accelerate technology transfer in the medical field. They currently have innovations on market, including a hand sanitizer (Sanidrop) and other medical support services and products.

Meetings with Guest Presenters/Research Support Institutions

On 6th November 2018, meetings were held with various Research Support Institutions. These included: Inter-University Council for East Africa (IUCEA), National Council for Science and Technology (UNCST) and Research and Education Network for Uganda (RENU).

Launch of the DAR Project and Overview of STI in Uganda

Dr. Phillip Ayoo, the Principal innovation & outreach officer, Innovation and Coordination at the Inter University Council for East Africa (IUCEA), officially launched the DAR project in Uganda. He applauded the Technology Bank and Research4life for making it possible for the East African region to access the information at no cost. He also commended the efforts by Technology Bank

of UN to build capacity on DAR in Uganda's institutions and for bringing together different local partners, who are also crucial in moving science and technology, and

DAR in Uganda. He further implored all participating institutions to go an extra mile as researchers, ICT specialists, and librarians to identify their institutional gaps in DAR and improve them for realization of a bigger goal of boosting STI in Uganda.

Workshops

Two workshops held in Uganda, on 7th to 9th November 2018 at Uganda Christian University (UCU) and 12th to 14th November 2018 at Mbarara University of Science and Technology (MUST), stem from Work Activity 2 of the Technology Bank. This activity aims at promoting access to research and technical knowledge in selected least developed countries, among which is the Republic of Uganda. This activity was highly supported by the existing information infrastructure build by Research4Life, which is another United Nations supported public-private partnership.

The usage of Research4Life Resources shows that Uganda has a fairly high usage. For example, in the period of July 2017 to May 2018, Makerere University registered 16,056 logins, Mbarara University of Science and Technology 1,877 logins, Uganda Christian University 1,330, and Uganda Martyrs University 1,431, among many other institutions. Comparatively Uganda has the highest usage in Africa, and globally, and comes only after Nepal and Bangladesh. The high uptake of Research4life resources is also reflected in the number and quality of research output in the country.

Objectives of the Workshops Were to;

- Enable, facilitate and increase online access to costly scientific journals, books and databases at no direct charge;
- Put in place the necessary capacities to create and/or scale up access to and use of scientific and technical knowledge;
- Provide training for librarians, university teachers, graduate students, researchers, IT specialists and other relevant constituencies;
- Create tangible, measurable results quickly through intensive, country-wide campaigns in the least developed countries in order to integrate use of the scientific and technological potential in all relevant activities;
- Lay the groundwork for other activities of the Technology Bank through substantial improvement in the scientific and technical information infrastructure in the least developed countries.

Workshop Venues, Facilitation and Participant Composition

The first workshop was held in Kampala, at Uganda Christian University (UCU). The second workshop was held at Mbarara University of Science and Technology (MUST) in Mbarara. The workshop facilitators included guest presenters, the Country Coordinator and the two Country Focal Points (CFPs), Mr. Onan Mulumba and Ms. Caroline Kobusingye. Tasks were divided amongst the facilitators and support was provided to participants during the practical sessions and group tasks.

The workshop participants comprised librarians/information officers, IT staff, researchers,

lecturers, government officials, and administrators. These came from different categories of institutions, including; universities, research institutions, government ministries/bodies, vocational institutions, professional associations, public libraries, and companies. The overall gender distribution stood at 57 (62.6%) male and 34 (37.4%) female.

Discussions and Training Activities

Training activities were preceded by guest presentations from key stakeholders and research support bodies in the national science, technology and innovations strategies, including;

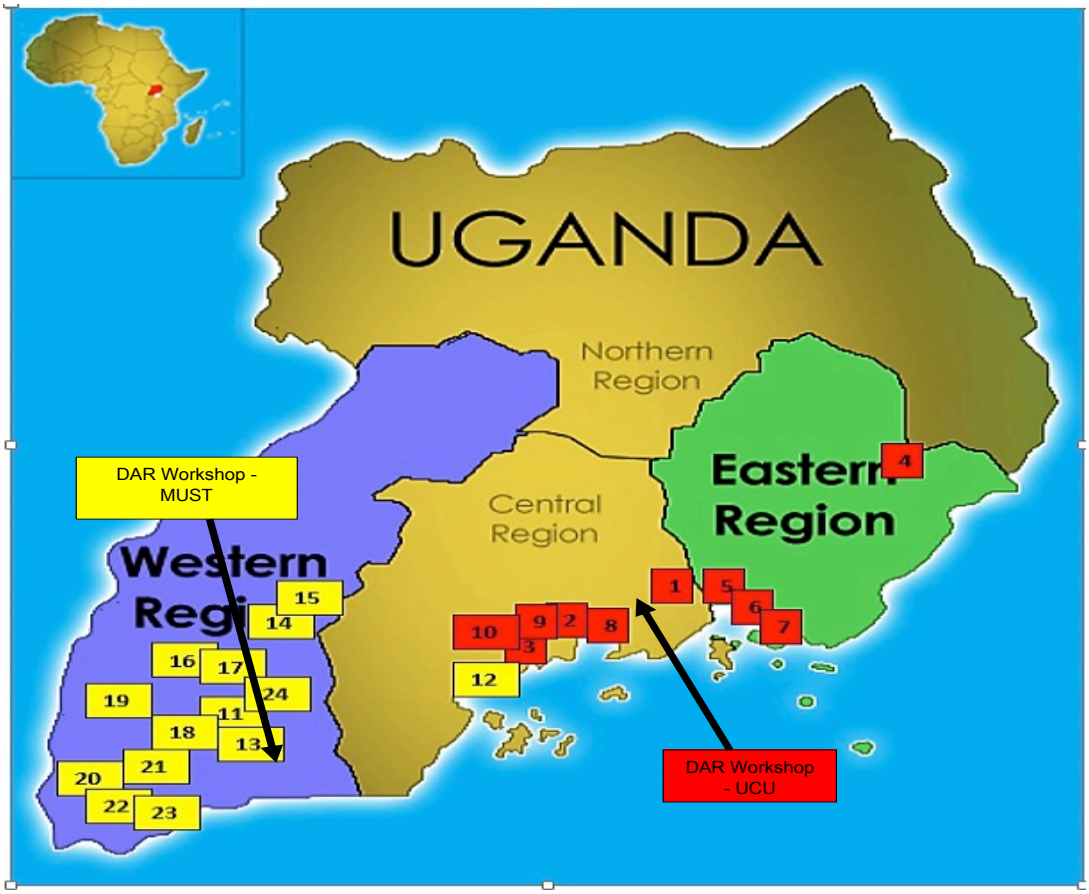
- Uganda National Council for Science & Technology (UNCST) - Ms. Hellen Naluyima Opolot;
- Inter University Council for East African Universities (IUCEA) - Dr. Phillip Ayoo;
- Research And Education Network for Uganda (RENU) - Eng. Isaac J. M. Kasana;
- Consortium of Uganda University Libraries (CUUL) – Ms. Jesca Karungi;
- Technology & Innovation Support Centres (TISCs) National Focal Point – Mr. Tonny James Lubwama (from Uganda Registration Services Bureau);
- Ministry of Science Technology and Innovation (MoSTI) - Hon. Elioda Tumwesigye represented by Mr. Patrick Joraam Mugisha;
- Deputy Vice Chancellor, AA (Kyambogo University) & Research4Life knowledge expert – Prof. Maria G. N. Musoke.

Workshop Summary

			Kampala workshop	**Mbarara workshop**	**Total**
Workshop participants	Gender	Male	26	31	57
		Female	21	13	34
	Total		**47**	**44**	**91**
Participants' profession	Librarians / Information officers		24	13	37
	IT staff		2	1	3
	Researchers		5	4	9
	Lecturers		6	4	10
	Government officials		5	4	9
	Administrators		4	14	18
	Others		1	4	5
Number and type of organizations represented	Universities		10	10	20
	Research institutions		4	1	5
	Government ministries / bodies		5	4	9
	Vocational institutions		4	1	5
	Professional associations		1	1	2
	Public libraries		0	1	1
	Companies		3	1	4

Table 1. Summary of workshop participants.

Institutional mapping



1 – Uganda Military Engineering College
2 - Aquaculture Research and Development Center, Kajjansi
3 - University of Kisubi
4 - Soroti University
5 - National Fisheries Resources Research Institute (NAFIRRI)
6 - UPDF, Junior Command and Staff College
7 - Uganda Senior Command and Staff College
8 - Makerere University Business School
9 - Nkumba University, Nkumba
10 - Uganda National Council of Science and Technology
11 - Mbarara University of Science and Technology (MUST)
12 - Lake Victoria Regional Authorities Cooperation (LVRLACC)
13 - Bishop Stuart University
14 - Mountains of the Moon University
15 - African Rural University, Kagadi
16 - Kampala International University, Bushenyi
17 - Ankole Western University, Kabwohe
18 - University of St. Joseph
19 - Bundibugyo Community Library
20 - Kachwekano Zonal Agricultural Research and Development Institute, Kabale (KAZARDI)
21 - Bishop Barham, UCU
22 – Kabale University
23 - Uganda College of Commerce - Kabale
24 - Ibanda University

Figure 1. A map showing the institutions trained and their geographical distributions

Conclusion

The inception of the DAR activities were generally welcomed by all organizations and individuals who were engaged in the activities. The workshop activities benefitted a total of 91 participants, both at Uganda Christian University and at Mbarara University of Science and Technology. After the Kampala workshop, a cascading effect started to be realised when one of the participants immediately trained her students on the skills she had gained at the workshop.

It was also noted that there was much welcome for the partnership between the Technology Bank and the stakeholder institutions, and some institutions like the Ministry of Science, Technology and Innovations requested to sign MoUs with the Technology Bank. Furthermore, the workshops saw local partners seeking collaborations amongst themselves.
Finally, the value of the activities invited attention from the government and a request was made to extend the services to the rest of the country.

References

New, W. (2017). UN Establishes Technology Bank For Least-Developed Countries, Including An IP Bank. Retrieved January 12, 2019, from http://www.ip-watch.org/2017/01/06/un-establishes-technology-bank-least-developed-countries-including-ip-bank/

Technology Bank for the Least Developed Countries : budget and programme of work for 2018. (2018). Retrieved from http://unohrlls.org/custom-content/uploads/2018/04/TBLDC-2017-3-Rev1_EN.pdf

UN-OHRLLS. (2019). Technology Bank for the Least Developed Countries. Retrieved January 24, 2019, from http://unohrlls.org/technologybank/

United Nations. (n.d.). Feasibility Study for a United Nations Technology Bank for the Least Developed Countries. Retrieved from https://sustainabledevelopment.un.org/content/documents/2106Feasibility-Study-for-a-United-Nations-Technology-Bank-for-the-Least-Developed-Countries.pdf

United Nations. (2017). Technology Bank for Least Developed Countries Operationalized, 22 September. Retrieved January 20, 2019, from https://www.un.org/press/en/2017/dev3292.doc.htm

Inside the Scientific Paper

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Abstract

Résumé Français: Le chercheur a une relation « charnelle » avec la publication scientifique. C'est en effet à travers l'article qu'il communique ses résultats et c'est à travers son écrit qu'il est évalué et l'évolution de sa carrière en dépend profondément.Jadis un simple vecteur de transmission des résultats, la publication scientifique devient progressivement un outil d'évaluation individuelle et collective des scientifiques et des institutions qui les emploient avant de se transformer au début du siècle dernier en de véritables modèles économiques en pleine transition. Cette présentation analyse les dessous de la communication scientifique.

English Abstract: The researcher has an intimate relationship with scientific publication. Through the articles they write they communicate their results, and they are evaluated through their papers. The progression of their careers depends profoundly on their publications. Formerly a simple vector of transmission of knowledge for scientists and their institutions, scientific publication has gradually become an individual and collective evaluation of knowledge, and have become real economic models.

Strategies for Providing Access to Information No Matter the Location, Technological Access, and Patron: A case for Malawi

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Abstract
Malawi has a number of researchers located in various scientific institutions throughout the country who use information available in different formats. Apart from these researchers, the country has also scholars, policy makers, teachers, extension workers and farmers who seek information for various usages. Some of the uses of the information are literature review, teaching and learning, extension, planning, decision making, access to markets for farm produces and community education. Providing access to relevant information involve a number of players such as librarians, communication and information experts and broadcasters. Access to the information must be timely and in the right format considering that there is now advanced technology. The paper therefore talks of the various ways of accessing relevant information in Malawi, taking into consideration the available technology and the location of the information users. The paper also outlines the challenges faced by those involved in providing the needed information.

Keywords: Malawi, science, information, technology.

IODE Associate Information Units : A New Opportunity for Marine Information Managers to Participate at the Global Level

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Abstract

How can the marine information management community participate more actively within the International Oceanographic Data and Information Exchange (IODE) Network? Although there are National Coordinators for Marine Information Management, there has been no other mechanism for IODE to communicate directly with other marine information professionals, and it has been a challenge for IODE to reach the broader marine information community. This changed in 2017 at the 24th session of the IOC Committee on IODE when the Committee approved the establishment of Associate Information Units (AIUs). Interested regional or national projects, programmes, institutions or organizations with information activities can apply to become an AIU, and if approved, benefit from the ability to influence the IODE Committee decisions on

global marine data and information initiatives. A representative from the Joint IODE-IAMSLIC Group of Experts in Marine Information Management in a Transitional Capacity (GEMIM-in-T), which was tasked with designing and managing the application process, presented this new opportunity to conference attendees. She outlined the benefits, reviewed the Terms of Reference, described the application process, and shared progress-to-date. For anyone wishing to apply, the AIU application form is available at: http://www.iode.org/aiu

Keywords: International Oceanographic Data and Information Exchange, Associate Information Units, Marine Science Libraries, Marine Information Management, Libraries

Introduction

The International Oceanographic Data and Information Exchange (IODE) programme of the Intergovernmental Oceanographic Commission of UNESCO (IOC) was established in 1961. Its purpose is "to enhance marine research, exploitation and development, by facilitating the exchange of oceanographic data and information between participating Member States, and by meeting the needs of users for data and information products." The network structure of IODE includes 66 National Oceanographic Data Centres, 81 National Coordinators for Oceanographic Data Management, and 42 National Coordinators for Marine Information Management (IODE, 2018a). Recognizing the importance of the wider oceanographic data and information community as key stakeholders in the IODE Network, and to broaden participation beyond the national centres and coordinators, IODE established Associate Data Units and Associate Information Units, both of which can be projects, programmes, institutions or organizations. Associate Data Units (ADUs) were approved by the IOC Committee in 2013 (IODE, 2013), and Associate Information Units (AIUs) were approved in 2017 (IODE, 2017). As of December 2018, there were 29 ADUs (IODE, 2018b) and two AIUs (IODE, 2018c).

The Joint IAMSLIC/IODE Group of Experts on Marine Information Management in a transitional capacity (GE-MIM-in-T), which was established in 2017 (IODE, 2018d), was tasked with promoting the new AIU initiative to marine science libraries, designing and managing the application process, and evaluating applications. This paper focuses on the Associate Information Units, including the benefits, terms of reference, application process, and progress-to-date.

Associate Information Units (AIUs)

An Associate Information Unit or AIU is an organization, institution, project or programme with a marine science information activity. Joining IODE as AIUs offers

libraries and information managers the opportunity to collaborate and create projects using their expertise of metadata, document repositories, data management practices, and the organization of knowledge. By establishing AIUs, IODE aims to promote greater communication with the global marine information community, and to offer it a greater voice in strategic planning for data and information products and services.

Key benefits include:

- Being part of an international marine data and information vision
- Influencing the future digital direction of marine information
- Participating in innovative projects, meetings, training courses, workshops
- Sharing and gaining experience in new technology applications
- Being part of a professional network of global marine information managers

Terms of Reference
The following Terms of Reference describe the profile of an AIU.

1. Be national projects, programmes, institutions or organizations, or regional or international projects, programmes, institutions or organizations (including academia) that carry out marine information management functions, and/or provide marine information services/products;
2. Be staffed by at least one marine information professional (by qualification or experience);
3. Actively participate in the further development of online information services and products;
4. Promote Open Access to information. In this context “Open Access” is defined as “unrestricted access and unrestricted reuse” to/of information;
5. Display a collaborative and networking ethos through:
    a. Membership/partnership of professional information networks to enrich their own as well as the entire IODE community;
    b. Sharing expertise and experience with other AIUs, and IODE National Coordinators for Marine Information Management;
    c. Sharing information on new digital initiatives implemented within the AIU, with the IODE community;
    d. Encourage organization staff to submit to OceanExpert
6. Receive information on, and contribute to, IODE standards and best practices related to marine information management;
7. Be welcomed to participate in training activities, organized within the framework of the IODE OceanTeacher Global Academy programme;
8. Be welcomed to participate in IODE workshops and projects;

9. Agree to display the IODE/AIU decal logo on your webpage and on marine information products developed in collaboration with IODE,
10. Agree to make available information management documentation (standards, practices, guides…) used by the AIU for the wider marine science library and information community.

Application process

Interested libraries are encouraged to carefully review the Terms of Reference and Criteria before applying. Note that there are four essential criteria: having a web presence, having a collections holdings database, being staffed by a marine information management professional, and actively participating in a professional network.

The steps in the application process are:

1. Complete the application form at: http://www.iode.org/aiu and submit to Peter Pissierssens, IODE Programme Coordinator, p.pissierssens@unesco.org
2. GEMIM-in-T reviews the application using the Terms of Reference and Criteria (until February 2019).
3. GEMIM-in-T submits a recommendation to the IODE Management Group for approval. After February 2019 the IODE Management Group, which will include marine information representatives, will review applications.
4. Applicants are contacted in writing by Peter Pissierssens.
5. If an application is approved, then information about the new AIU will be posted on the IODE site and a Certificate of Accreditation issued.
6. Accreditation is reviewed every 5 years.

Questions should be directed to Peter Pissierssens at p.pissierssens@unesco.org

Progress to date

In 2018 the GEMIM-in-T designed an application process and began promoting the new AIU initiative to the marine information community. Invitations were sent to 30 eligible marine libraries, and presentations were given at the ASFA Advisory Board meeting in June 2018 and the IAMSLIC Annual Conference in October 2018. In the fall of 2018, GEMIM-in-T evaluated applications from two libraries which were then approved by the IODE Management Group. The MBLWHOI Library at the Marine Biological Laboratory Woods Hole Oceanographic Institution in Woods Hole, Massachusetts, and the INSTM Library at the Institut National des Sciences et Technologies de la Mer in Salammbo, Tunisia were the first two libraries to join as accredited IODE Associate Information Units. Future plans to encourage applications include continued promotion to marine libraries through blog posts and email campaigns with the support of IAMSLIC. As more

AIUs join IODE, the community of marine information managers within the Network will be strengthened.

References

IODE. (2013). *IOC Committee on International Oceanographic Data and Information Exchange, Twenty-second Session, Ensenada, Mexico, 11-15 March 2013*. Retrieved from: https://www.iode.org/index.php?option=com_oe&task=viewDocumentRecord&docID=10583

IODE. (2017). *IOC Committee on International Oceanographic Data and Information Exchange, Twenty-fourth Session, Kuala Lumpur, Malaysia, 28-31 March 2017, Summary Report*. Retrieved from: https://www.iode.org/index.php?option=com_oe&task=viewDocumentRecord&docID=19058

IODE. (2018a). *International Oceanographic Data and Information Exchange*. Retrieved December 22, 2018 from: https://www.iode.org

IODE. (2018b). *IODE Associate Data Unit (ADU).* Retrieved December 22, 2018 from: http://www.iode.org/adu

IODE. (2018c). *About AIUs*. Retrieved December 22, 2018 from: http://www.iode.org/aiu

IODE. (2018d). *Joint IAMSLIC/IODE Group of Experts on Marine Information Management (IAMSLIC/IODE GE-MIM) in a transitional capacity*. Retrieved December 22, 2018 from: https://www.iode.org/index.php?option=com_content&view=article&id=534&Itemid=100081

From Drips to Tsunamis: Planning for Disasters in Your Library

Panel Discussion

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Abstract
Disasters strike every area of any country and affect libraries, large or small. From a water leak to something big like an earthquake, hurricane or fire, libraries need to have a plan of action for an effective response. Our panel discussion included librarians who have survived disasters along with others who live in potentially hazardous areas. We discussed disaster plans from a number of institutions of different sizes, collections and budgets as well as providing some best practices and resources for creating or updating your own plan.

Keywords: Disaster planning, libraries, best practices.

Below is a copy of the handout of resources that the panel put together.

- American Institute for Conservation of Historic and Artistic Works. *Publications and Resources: Disaster Response and Recovery*. http://www.conservation-us.org/resources/disaster-response-recovery#.W6sIcxNKjMU
- American Institute for Conservation of Historic and Artistic Works. *Emergency Response and Salvage Wheel.* http://store.conservation-us.org/site/index.php?app=ecom&ns=prodshow&ref=FAIC-1
- Community Emergency Response Team. https://www.ready.gov/community-emergency-response-team
  - Training materials in English and Spanish are at the bottom of the page.
  - Many countries have similar established programs. Search for your country and "emergency response training"
- Consortium of Academic and Research Libraries of Illinois. *Supplies and Tools for Library Disaster Response*. https://www.carli.illinois.edu/products-services/collections-management/supplies-tools
- Michigan State University Libraries. *Disaster Recovery For Collections.* 6th Edition. https://lib.msu.edu/sites/default/files/media/browser/MSU_Disaster_Manual_PUBLIC.pdf
- Page, Julie. *Guidelines for Establishing Salvage Priorities.* http://www.sandallnet.org/wp-content/uploads/2017/02/EstablishingSalvagePrioritiesGuidelines.pdf
- Yale University Library Preservation Services. *Collections Prioritization Tool.* https://guides.library.yale.edu/preservationservices/collectionstool

- American Red Cross. *Emergency Supply Lists:* https://www.redcross.org/get-help/how-to-prepare-for-emergencies/survival-kit-supplies.html
- Oregon Office of Emergency Management. *Disaster Preparedness Publications.* Some are available in Spanish as well as English. https://www.oregon.gov/OEM/hazardsprep/Pages/Preparedness-Publications.aspx
- From Facilities to Trauma: Disaster Planning and Community Resiliency at Your Library. Webinar from WebJunction – free. https://www.webjunction.org/events/webjunction/disaster-planning-community-resiliency.html
- US Ready.Gov. *Resources for Children.* https://www.ready.gov/kids
- Librarian's Disaster Planning and Community Resiliency Guidebook and Workbook. https://www.njstatelib.org/services_for_libraries/resources/disaster_planning/
- United States National Library of Medicine. *Disaster Information Management Research Center.* https://disasterinfo.nlm.nih.gov/
- IFLA. *Disaster Preparedness and Planning: A Brief Manual.* Available in English, French, Spanish, Arabic and Czech. https://www.ifla.org/publications/node/8068
- American Library Association. *Library Disaster Preparedness & Response Guide.* https://libguides.ala.org/disaster
- Pocket Response Plans - Information You Should Always Have With You. https://www.statearchivists.org/programs/emergency-preparedness/emergency-preparedness-resources/pocket-response-plantm-prep-tm-english-template/