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ASFA MAGAZINE

AQUATIC SCIENCES AND FISHERIES ABSTRACTS MAGAZINE

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ASFA at 50: Supporting the 2030 agenda for Sustainable Development

Having celebrated its 50th anniversary in 2021, ASFA is now looking to the future and how it can support the United Nations 2030 Agenda for Sustainable Development. As an international network focused on disseminating the world's aquatic science, fisheries and aquaculture research, there are many ways in which ASFA can and does contribute to meeting the Sustainable Development Goals (SDGs). SDG14 (Life below water) is to "conserve and sustainably use the oceans, seas and marine resources for sustainable development" (<https://sdgs.un.org/goals/goal14>) and this issue covers

some of the ways in which ASFA contributes to this goal. These include how to search the ASFA database to find relevant research on these topics produced by institutions around the world. We also present an update on a project ASFA is supporting between FAO and SEAFDEC to identify and record research and datasets from southeast Asia related to SDG Indicator 14.4.1 – Proportion of fish stocks within biologically sustainable levels. In addition to SDG14, we also present the results of a survey on the impact of gender on career experiences of library and information professionals working

in aquatic sciences – combining SDG14 with SDG 5 Gender Equality and SDG 8 Decent work and economic growth. Also presented in this issue is an article on SushiDrop project (Sustainable fisheries with DROnes data Processing) and the recently launched digital archive from the International Collective in Support of Fishworkers (ICSF). With so much going on, we hope you have time to read this latest issue of the magazine. The next issue will be focused on ASFA Partners in Latin America and the Caribbean – any questions, please email: ASFA-Secretariat@fao.org.



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Career experiences of information professionals working in aquatic sciences: Is discrimination still a fact?

This article presents an update on the recent survey jointly designed by ASFA and the FAO Fisheries and Aquaculture Gender Team to assess the career experiences and outcomes of librarians and information professionals working in aquatic sciences. The survey ran between October - November 2021 with 59 respondents recorded. The authors of this article present initial findings from the survey responses, as well as outlining next steps and how you can be involved in this work.

Why monitor discrimination in aquatic sciences?

Although nowadays gender equality and women's empowerment are thriving themes in the global agenda, discrimination against women persists in many areas of life, especially the workplace. As early as 1958, the UN Discrimination (Employment and Occupation) Convention began referring to discrimination as *“any distinction, exclusion or preference made on the basis of race, colour, sex, religion, political opinion, national extraction or social origin, which has the effect of nullifying or impairing equality of opportunity or treatment in employment or occupation”* (Discrimination (Employment and Occupation) Convention, 1958). Of course, in the last half of century definitions have evolved and related issues have grown accordingly in terms of complexity. The UN Convention definition has acquired new levels of discrimination in many national and international legal frameworks, such as sexual orientation, disability and age, but also marital status and pregnancy as specific conditions. Still, discrimination can be either direct or indirect: the former occurs when there is an explicit difference in treatment based on sex or gender, the latter is related to the general circumstances and measures that are designed to be equal, but in practice turn out to generate inequalities towards women (UNWomen, 2016).

For better or worse, librarianship is often perceived as a profession open to women. However, studies have shown that barriers persist: a North American study found that whilst 83 percent of librarians are women, only 58 percent of management positions are held by women (Martin, 2015); and the Association of Research Libraries recently reported that the overall salary for women is 95 percent of that paid to men (Association of Research Libraries, 2020). At a time of uncertainty, communicating the value of libraries and librarians' work to managers and directors is needed to ensure they remain funded and can continue to provide access to data, information and research. Therefore, the FAO Fisheries and Aquaculture Gender Team and ASFA Secretariat agreed to work jointly in order to investigate whether discrimination is experienced by librarians working in aquatic sciences, and if so, what the possible causes might be.

Summary findings from the survey

To better understand the experiences and career outcomes of librarian and information professionals working in aquatic sciences, fisheries and aquaculture, a short survey was designed and disseminated through the ASFA and IAMSLIC networks. The survey aimed to investigate whether gender plays a role in career outcomes and if there are any other factors that limited the respondents' opportunities and development, such as age, ethnicity, religious belief or sexual orientation. These factors could lead to further considerations in terms of intersectionality, which will be discussed in the next paragraphs. In total, 59 professionals participated to the survey with 73 percent self-identifying as women and 27 percent as men – however, none of the respondents choose a non-binary option when answering to this specific aspect. The most represented age groups were 35-44 and 55-64 whilst the geographic coverage showed four countries having the highest participation rates. Listed in descending order of participation rate: Russian Federation, United States of America, Philippines and Canada were the countries most of the respondents were currently based in when the survey was submitted.

Aquatic science librarianship: female-dominated, except in leadership

According to the questionnaire's results, aquatic science library and information roles appear female-dominated (73 percent women; 27 percent men). However, women respondents reported difficulties in accessing leadership positions and reported barriers to achieving career goals and unfair remuneration as this section discusses. These survey results seem to confirm the perception mentioned in the introduction that whilst women make up the majority of those working in librarianship, they remain under-represented in management positions.

When asked what barriers had been experienced in their career, women working in aquatic sciences cited various factors as barriers to career progression, although with different rates (see Table 1). Whilst budgetary constraints may limit career opportunities at institutions, ASFA can and does provide training opportunities in aquatic science information management and is looking to work with its UN co-sponsoring partner IOC-IODE to provide a joint training course on use of two key systems – AquaDocs and OpenASFA.

	Lack of qualifications	Lack of training opportunities	Lack of time to spend on career	Lack of career opportunities at my institution	Being overlooked for promotion
Female (N=43)	14%	14%	9%	28%	14%

Table 1: Affirmative responses (“Yes”) to the question: “Which, if any, of the below constraints, limitations or difficulties have impacted your career?” – a focus on women respondents.

As we can see in the table, the major constraint seems to be related to lack of career opportunities: 28 percent of the professionals claimed to have had limited career opportunities in their institution, with another 14 percent of them being not sure if that was the case.

Professionals from different geographic areas described specific situations involving either direct or indirect discrimination, with different layers of discrimination added to the common ground of being women – such as, for example, age and ethnicity. Therefore, when looking at barriers to achieving career goals, it is not possible to look at one aspect, such as gender, in isolation but rather to investigate numerous potential factors at once, which is what this survey aims to achieve.

Aspects of indirect discrimination

Librarians/information managers was the most numerous category of respondents (N=41), followed by researchers/policy (N=8). Other categories received five or fewer responses. These roles specifically refer to librarians and researchers that work, in most cases, in governmental or academic institutions. Professionals involved in the survey proved to have a long-lasting career in these institutions: in fact, more than the half of the sample worked in their institution from over ten years with similar years of experience in the sector. Concurrently, the majority of respondents indicated that they benefited from a pay increase and promotion throughout their careers. One would assume that career continuity would lead to promotions in terms of both grades and remuneration in fishery sciences. However, when looking in more detail, it seems more common for women to receive a pay increase rather than to have a promotion or to experience career change.

In addition, 30 percent of the respondents claimed that their remuneration is not well proportioned with their professional grades and needs, with 26 percent of total number of women respondents mentioning this. As one respondent commented, highlighting the difficulty librarianship has of being seen as a professional level career:

“The general human resources structure in my institution is divided in 3 groups: General, Professional and Technical-Scientific. The lowest salaries are from General group, and librarians are considered administrative employees, so they are included in this group. This is not fair; we have a qualified job very important and directly connected to main tasks of scientists.”

In terms of opportunities, respondents seem to have different perspectives on whether lack of time and qualifications had or not a major role throughout their careers.

“I had lack of qualifications in the sphere of aquatic sciences so at the age of 35 I started my Master’s. Done with that, now I have enough qualifications. In the beginning, I experienced a lack of training but with the help of the IODE courses and ASFA trainings I managed to fill that gap and I am very grateful for that.”

If looking at the workplaces where career opportunities seem to be equally available to all genders, the respondents from governmental institutions are the most positive with this statement. On the other hand, professionals from universities and/or academic environments in general expressed the highest level of disagreement among the institution types within the sample regarding that statement. In addition to this, a further analysis can be found at country level: 28 percent of professionals said that career opportunities in their country are not equally available to all genders, with major concern expressed by respondents in the USA and Russian Federation.

“My Institution depends on the government, so it has political actions, so it’s difficult to be valued for the work to promotion. The directors know our work, the value of it, but it does not consider it for promotion, or other things.”

The most controversial point, still, is related to the difficulties that women face in accessing leadership positions. Considering the size of the library in terms of number of employees, some interesting insights emerged from data: the smallest the size of the library (1 to 15 employees in this case) reported the highest the number of women working in the library. Although professionals mainly work in small libraries with high percentage of women employed, the number of women in leadership position is not as high as expected. In most cases, women hold none or few (0 to 25 percent) leadership positions out of staff number: it could be said that even in a female-dominated workplace, it is most unlikely for a woman to be in a leadership position. The case for women covering most of the leadership positions (75 to 100 percent out of the overall number of staff) shows the lowest percentage of occurrences, with only 18 percent of cases reported. In the medium-size libraries/information centres (15–100) we only find three entries: two respondents said that women make up 25 to 50 percent leadership positions and the one

other respondent said women make up 0-25 percent of leadership positions. This could indicate that the larger the library, the less likely a woman is to hold a leadership position, however given the relatively small sample size it is difficult to draw firm conclusions. But, again, even in contexts where women account for most of the staff (like in small-size libraries) they seem to find difficulties in reaching leadership positions.

"There are also not a lot of men in the other libraries (outside of my own) and when leadership roles arise, I've noticed a trend towards 'gifting' men these roles whilst making the women interview over and over for them. This trend is not seen in our aquatic sciences library, but rather at other libraries within the university."

Multiple layers of direct discrimination

The survey was designed to find out if, and to what extent, respondents have experienced discrimination based on any of the factors that make up their identity: gender, age, social origin, disability, ethnicity, sexual orientation and religious belief.

It is important to stress that identities are complex, and direct discrimination pushes for considerations that are linked, but not limited to gender. To understand gender relations, it is essential to intersect those factors that intertwine in unique ways creating advantages and disadvantages, discrimination, constraints and opportunities. This is reflected in the concept of "intersectionality" which has to be used to capture the different layers of discrimination in order to redress them, as they affect human relationships within and outside the workplace (USAID, 2018).

It emerged from the survey that the majority of respondents did not experience discrimination based on one of the factors proposed. Yet, qualitative insights nuanced these results, depicting a much more complex situation:

Age, for example, has the highest number of cases where respondents claimed to have faced discrimination during their career. For women respondents, the age group where professionals claim to have faced discrimination is the one including 45 to 54 years-old women working in the sector. In this case, discrimination could have been experienced especially when professionals in that age group were significantly younger:

"In the beginning, some colleagues of older age used to be quite sceptical about the too young replacement of the retired worker, but after a while it was very good."

Considering **gender**, there are only few cases reporting a direct discrimination (only 5 percent), but the experiences reported in the qualitative responses show some relevant traits to be highlighted:

"I was personally refused to participate in the project, believing that men should earn. The project was proposed to a man. On some scientific expeditions, it is preferable to take men."

Social origin seems to be still a factor, in very few cases, but still has a clear example reported in the insights that a professional shared in the qualitative section:

"Because of my origin, it is from the mountains of my country."

Final remarks

Discrimination in aquatic sciences is somehow still a fact for librarians and information professionals. Furthermore, we saw that issues persist in granting women access to leadership roles and many other nuances of either direct or indirect discrimination can be added when considering specific characteristics of professionals. These behaviours and presumptions lie at systemic level and start from even beyond the simple working environment of fishery and aquaculture libraries.

"There is a patriarchal society in my country (Machismo)."

Workplaces are not as equal or inclusive as we would like to imagine them, as the same aspects of discrimination repeat 'horizontally' and adapt to different organisations and institutions, regardless of their size and composition. Gender is a social construct, separate to biological sex, and in that sense, brings cross-cutting questions in every segment of society, with information professionals working in aquatic sciences making no exception.

The strive for gender equality in every component of our society is therefore not only a matter of social justice, but most importantly a key driver for achieving a more inclusive and sustainable system for fishery and aquaculture professionals' work. The actions towards this goal are still being implemented, but are not yet sufficient to eradicate these forms of direct/indirect discrimination that are most commonly affecting workplaces in general – as they often tend to result in uptaking approaches that are neither really gender sensitive nor gender transformative.

"All government institutions in my country actively encourages gender equality. In fact, most Government job advertisements includes a note – something like "Women are encouraged to apply as we strive to achieve a gender balance in our work force". But despite that, when selection process involves interview, the attitudes and prejudices of men in the panel may have negative implications for female candidates. I might be wrong here, but I have heard comments from senior managers like – "if we take female candidates, they will not be able to perform overtime works during late hours" or "female staff will try to avoid long cruises at sea due to family pressures".

Government allows female staff with kids below 18 years old to take “Child Care Leave” up to two years during their career (taken in parts). It’s a pro-woman gesture from government, but in effect this has led to a kind of subtle preference for male staff by managers. I think even some male co-workers are jealous about this so called “privilege” provided only to female staff.”

Finally, social intervention and change are not only to be perceived as long-term concepts: the need for a systemic approach to address inequalities and discrimination does not imply that small-scale and targeted actions are useless to the process.

“A few years ago, I participated in the gender commission at MGAP. I remember a very significant case of discrimination against women. MGAP did not grant loans to women for entrepreneurship. The loan was granted to the husband, owner of the field or establishment, when the one who worked in the production, who carried out the project, who was in charge of the accounting part was the woman. Reversing that situation was an achievement of the gender commission.”

That is the reason why, in such a difficult time, the work of aquatic sciences’ libraries and of professionals contributing to their activities must be valued. Pushing the agenda for a perspective where both funding and career opportunities can support the struggle for gender equality and against discrimination at all levels is fundamental. At the same time, guaranteeing access to data, information and research is crucial. Therefore, people working to carry out this difficult task should be able to perform it regardless of their gender, age, sexual orientation, or any other human characteristic.

Next steps

In order to build on the results of the survey we aim to conduct in-depth interviews with some of the respondents. This will help to build a more detailed picture of career experiences of aquatic science librarians in different regions of the world and help us to understand whether gender or other factors work as barriers to achieving professional goals. If you did not respond to the original survey but would like to be interviewed as part of this study, please email: roxane.misk@fao.org.

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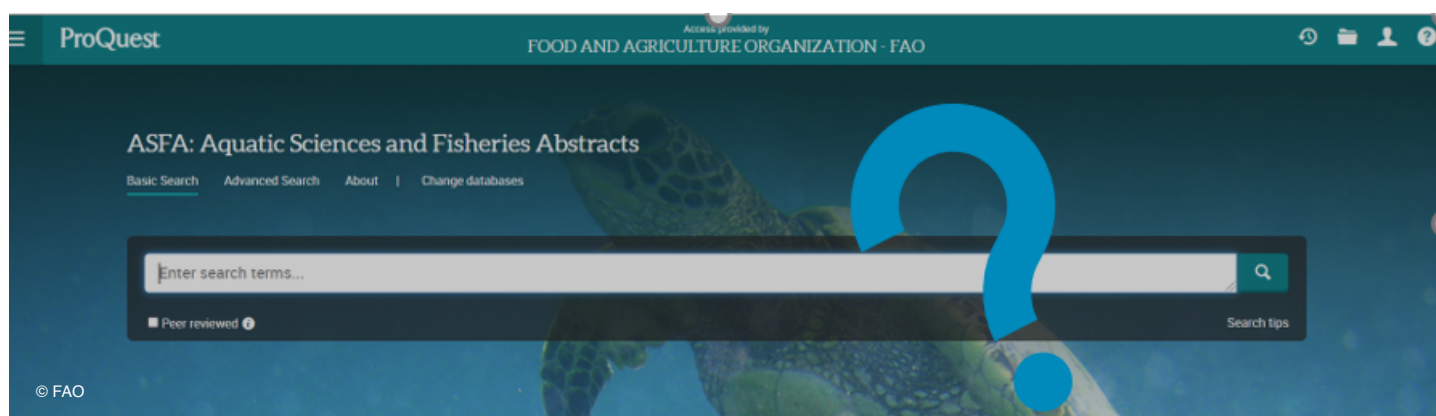
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Searching the ASFA Database.

Part one: Advanced search options



Do you struggle to find relevant aquatic science research or lack confidence using the Advanced Search Options? Then this series of articles is for you! This series will provide you with all the information, hints and tips to get the most out of searching the ASFA database, hosted on the ProQuest platform. The ASFA database contains over 4 million records related to aquatic sciences, fisheries and aquaculture and is available to ASFA Partners free of charge. Access is granted in return for efforts to contribute to the ASFA database- ASFA Partners contribute approximately 12 000 records per year to the database and for the first time in ASFA's fifty year history, the records are freely searchable on [fao.org](https://www.fao.org/fishery/en/openasfa): <https://www.fao.org/fishery/en/openasfa>. Whilst this represents a small fraction of

the 4 million records available on the ProQuest platform, it provides up to date access to international aquatic science, fisheries and aquaculture research, with a focus on hard to reach grey literature. If you would like to receive access to the ASFA database, please contact Tamsin.vicary@fao.org.

Though focused on the ASFA database, the skills discussed can be applied to other databases and information systems and by focusing on an aquatic science topic, in this case small scale fisheries, this article is relevant to all librarians, researchers and students with an interest in this area.

This first article provides guidance on formulating a search strategy and conducting it to meet a library

patron's needs. To help illustrate how to do this, the example of someone seeking information on the socioeconomic aspects of artisanal fisheries or small-scale aquaculture in the Caribbean is used. As 2022 is the International Year of Artisanal Fisheries and Aquaculture (IYAFA), now is the perfect time to refresh information retrieval skills to enable access to the latest research on this topic.

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Step One: Identify keywords

Before conducting a search it is important to ensure you fully understand the search query. We recommend you discuss the query with the library patron to make sure you understand what information is needed. It can be easy to make mistakes or misunderstand a library patron's request, especially when working remotely and communicating via email. Where possible, a quick phone call or face to face discussion can help to avoid misunderstandings.

In the example we're using, a library patron is struggling to find research on the socioeconomic impacts of artisanal fishing in the Caribbean. To begin formulating a search strategy, it is recommended to identify the major keywords in a query. Using the [ASFA multilingual Subject Vocabulary](#) to search for subject keywords identifies 'artisanal fisheries' and 'socioeconomic aspects' as the main subject keywords. ASFA records are also indexed with Geographic keywords so 'Caribbean' can be added to the search strategy to further narrow the results.

Step Two: Construct your search

In an age of information overload, devoting time at the start of your search to consider the logical relations between keywords and phrases can be a time efficient way to eliminate irrelevant results from a search and avoid the need to filter overly long lists of results. Boolean operators can be used to express the relationship between keywords and are used to filter (narrow) or expand (broaden) a search. Boolean operators can be summarised as follows:

- **OR** broadens your search results. For the library patron interested in both artisanal fisheries and artisanal aquaculture, the operator OR should be used to ensure both concepts are included in the search. Searching for “**artisanal fisheries OR small-scale fisheries OR small-scale aquaculture**” will retrieve documents covering any of these aspects – there are 7663 results for this search on the ASFA database.
- **AND** narrows search results, i.e. returns fewer results. The library patron is interested in the socioeconomic aspects of artisanal fisheries and aquaculture, so it is necessary to combine the socioeconomic aspects with the small scale fisheries and aquaculture to enhance the relevancy of results. Searching for “**artisanal fisheries OR small-scale fisheries OR small-scale aquaculture**” **AND socioeconomic aspects** will retrieve results related to the socioeconomic aspect of both small scale fisheries and aquaculture. This is a way of formulating a specific search - there are 141 results for this on the ASFA database.
- **NOT** can also be used to narrow a search. It is used to exclude results that contain a specific word or phrase. If the patron was only interested in fish we could search: “**(artisanal fisheries AND socioeconomic aspects) NOT mollusc fisheries**” to return results relevant to artisanal fisheries which are not mollusc fisheries.

Other general search tips are included in the box.

SEARCH TIPS

- Use quotation marks to search for an exact phrase, for example, “small-scale fishers”;
- Use truncation to include multiple forms of a word. Truncation will broaden your search, e.g. fish*= fish, fishes, fishery, fisheries, fishing, etc. farm*= farm, farms, farmer, farming, etc.
- Use Wildcard to replace any single character, either inside or at the right end of a word. Multiple wildcards can be used to represent multiple characters. co?managemet= co-management, comanagement
- Using Wildcard can be helpful when searching for non-Latin words, e.g. Russian surnames: Зайцев= Za?tsev will search for Zaytsev, Zaitsev or Zajtsev.

Step Three: Begin your Advance Search

Having constructed your search it is now time to run it on the ASFA database. Using Advanced search is recommended as this allows **multiple search** parameters to be set, such as publication date, source type, language etc. Having decided the subject and geographic keywords, we can enter the following search string on the database:

“socioeconomic aspects” AND loc(Caribbean*) AND (“artisanal fisheries” OR “small-scale fisheries” OR “small-scale aquaculture”) – **28 results**

If we think that this is too limited, we can expand ‘socioeconomic aspects to cover either social OR economic aspects by updating the search query:

(“artisanal fisheries” OR “small-scale fisheries” OR “small-scale aquaculture”) AND (socioeconomic OR soci* OR economic*) AND loc(Caribbean) – **93 results**

These results can be exported or saved to your account. The next article in this series will cover exporting records and how to combine with results from other systems to produce a reading list/ literature review.

For further assistance on searching the ASFA database you can consult the ProQuest LibGuides available [here](#),

or go to the Advanced Search Option in ASFA and select Search Tips in the Navigation Bar. The ASFA Secretariat also conducts regular training sessions with partners, if this would be of interest, please contact: maria.kalentsits@fao.org. Good luck with your ASFA searches!

Partnership update 2022

Since the last ASFA Magazine was published, we have sadly said goodbye to Arame Keita who has retired from Direction des Pêches maritimes, and welcomed Silvina Perez as ASFA Contact for Uruguay. The ASFA Partnership is continually evolving, for information on how to join, please see [pages 13](#).

Arame G. Ndiaye Keita has recently retired from her position at Direction des Pêches Maritimes. Arame has been an active ASFA Partner, instrumental in liaising with French-speaking ASFA Partners in West Africa; she has provided an excellent translation service in support to the ASFA CECAF-PESCAO project. Also, thanks to Arame's efforts, Direction des Industries de Transformation de la Pêche (DITP) has joined ASFA as Senegalese Collaborating Centre in 2021. The ASFA Secretariat wishes Arame a very happy retirement and good health. **Ms Mariama Diah** is a new ASFA Focal point at Direction des Pêches maritimes (DPM). She has recently attended the training session and will soon start creating the OpenASFA records for Senegalese publications.

Silvina Perez from Instituto de Investigaciones Pesqueras (IIP) has joined the ASFA partnership as the ASFA Focal Point and Inputter in Uruguay following a transfer of Andrea Cristiani to another position at the University of the Republic. She has completed a training and already creating the OpenASFA records.

We are pleased to announce that **Centre National de Recherche et de Développement de la Pêche et de l'Aquaculture (CNRDPA)** has recently joined the Associated Scheme thus becoming the first institution in Algeria that joined the ASFA Partnership.

Ms Assia Boukrouh, CNDRP Librarian will soon be trained in the OpenASFA input methodology and will be indexing institutional publications for ASFA. Thanks go to Saida Messaoudi for her assistance with recruitment CNRDPA into ASFA.

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Introducing the International Collective in Support of Fishworkers (ICSF) Archives/Digital library

The International Collective in Support of Fishworkers (ICSF) is an international non-governmental organization that works towards the establishment of equitable, gender-just, self-reliant and sustainable fisheries, particularly in the small-scale, artisanal sector. This article introduces the ICSF Archives/Digital library, a fantastic resource of small-scale fisheries information. The archives can be accessed here: www.icsfarchives.net

ICSF's Archives/Digital library is a one-stop-shop for all stakeholders with an interest in information and knowledge pertaining to small-scale and artisanal fisheries. The archives have ICSF's collections from the past 33 years. It offers more than 2 000 original documents and 12 000+ curated links. Set up in 1999 in Chennai, its mandate is two-fold: one, to gather various kinds of information pertinent to small-scale fisheries and fishworkers and, two, make it available to all stakeholders in a useful and readily available format.

To this end, the archive sought information and material from a variety of sources. They include peer-reviewed journals, books, conferences and meetings, newspapers, websites, fisheries databases, fishworkers organizations, NGOs, and governmental and multilateral agencies.

The archive's resources address a range of issues from across the world, all pertinent to ICSF's mandate: artisanal fisheries, fishworkers' working conditions, unions, fishworker movements, social security, women in fisheries, fisheries statistics, fishing technology, fishing communities, aquaculture, fisheries trade, fisheries management, coastal ecosystems and legal instruments.

The ICSF archives maintains regular contact – and exchange of ideas and material – with fishworkers organizations and NGOs working on issues of

relevance to small-scale and artisanal fisheries in Latin America, Africa and Asia. Its archive has become a valuable tool for collection and dissemination of information. Its design is geared towards making the material more dynamic and interactive. The documentation and dissemination activities under the Communications programme have markedly improved the quality of ICSF programmes, enhancing their reach and utility. The archive has responded in a timely manner to requests for information from various stakeholders, including FWOs and NGOs. It has enhanced the capacity of organizations to respond to developments in fisheries in an informed manner.

The archives has a special collection of 'grey publications' – unpublished or out-of-print material relating to fishing communities, demands of fishworkers organizations, fisheries policy, and fisheries trade etc. All of these are collated from the perspective of its relevance to small-scale fisheries. The collection includes rare publications, that is to say, they may not be available anywhere else, even though they are much sought after by researchers, policy makers, students, leaders of fishworkers organizations and journalists, among others. The collections are stored in both virtual 'soft' copies and in 'hard' print copies. The dissemination is in the form of soft copies to users, given that the print copies of documents are vulnerable to damage.

All ICSF publications are available in the archives, including the triannual publications like *SAMUDRA Report* and *Yemaya*. Add to this over 2 000 resources published by other organizations, including infographics and films pertinent to fisheries issues. They are also available via URLs. The goal is to digitize remaining fisheries grey literature documents within a year.

The resources of the archives are classified under the following categories: Aquaculture, Biodiversity, Decent Work, Disasters and Climate Change (including Covid-19), Fisheries Trade, Gender in Fisheries and Aquaculture, Right to Resources (including access rights and tenure) and SSF Guidelines.

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Twitter: <https://twitter.com/ICSF1>

Sustainable fisheries with drones data processing – the SUSHI DROP project (Interreg Italy-Croatia 2014-2020 Programme)

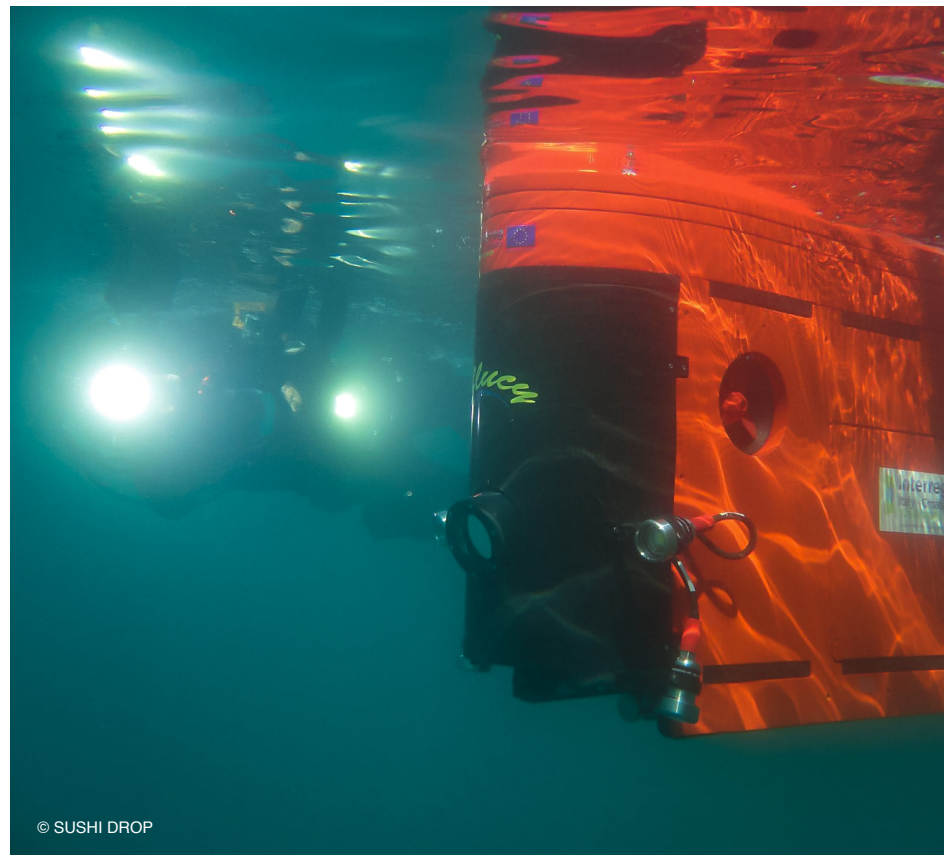
Adriatic continental shelf bounded between Croatia and Italy is one of the seas with the highest productivity and biodiversity, and hosts habitats requiring specific conservation and management measures. There are between 6 000 and 7 000 different species of plants and animals in the Adriatic among which endemic taxa stand out, so the Adriatic is classified as a separate biogeographical entity of the Mediterranean Sea.

Adriatic sea is also heavily affected by human activities such as fishing, aquaculture, tourism, and hydrocarbons extraction. The natural balance in the Adriatic is affected by the extremely high fishing effort, which is increasingly, directly and/or indirectly, leaving negative consequences for marine organisms. Numerous fisheries regulation measures have been introduced to help establish sustainable management of renewable stocks. Also, systematic scientific research and monitoring of the condition of economically important fish communities in the Adriatic Sea have been conducted. However, all these measures apply only to the shallower areas of the Adriatic where most of the fishing effort takes place.

The deep parts of the Adriatic Sea are generally not covered by fishing regulation measures. Likewise, the fauna of the deep areas is poorly researched, especially in terms of community composition and population dynamics of species.

Besides these different interests, this area is also severely affected by environmental risks such as those induced by global warming.

Reliable and up-to-date information about the state of marine resources is essential to support sound management decisions for the protection of ecologically important areas. Conventional fish capture procedures are extremely onerous



in terms of human resources, besides being extremely invasive for the ecosystem. For this reason, the use of capture methods such as trawls is prohibited in Marine Protected Areas. Thus, there is an urgent need to develop accurate and non-invasive methods for mapping the marine ecosystems to establish their condition, extent, and geographical location. The urgency of such a need is highlighted in the EUSAIR Action Plan and in the Strategic Research and Innovation Agenda of the BLUEMED Initiative.

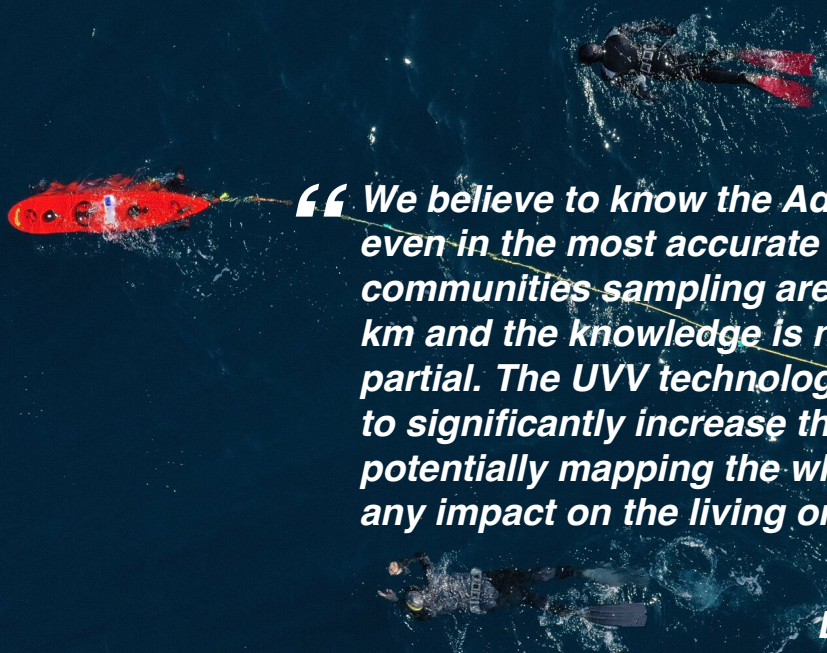
The SUSHI-DROP project that after two years was concluded on 31st of December, contributes to protecting biodiversity by exploiting the capabilities of the developed autonomous robot technologies to increase the knowledge of the habitats of the Adriatic Sea, overcoming the limitations that traditional methodologies have.

Within the Interreg project SUSHI-DROP, a customized

UUV (named “Blucy”) was developed and equipped with advanced instrumentation in order to implement a non-invasive mean to assess environmental status of habitats, fish stocks population and, in general, to monitor the biodiversity.

Thanks to the advanced technologies of the drone, such as the multibeam and high-resolution camera, it is possible to obtain a complete description of a given underwater area, from a morphological as well as a fauna point of view, highlighting benthic communities, fish and rock formations.

During the project, various missions took place on the Croatian and Italian part of the Adriatic sea. The results obtained by different methods in terms of the quality of the collected data were compared, and the amount of time and resources invested was compared, as well. It was confirmed that the drone



“ We believe to know the Adriatic Sea, however even in the most accurate survey of the benthonic communities sampling are collected every 10–15 km and the knowledge is necessarily limited and partial. The UVV technology give us the possibility to significantly increase this common knowledge, potentially mapping the whole Adriatic Sea without any impact on the living organism.

**– Prof. Corrado Piccinetti
Director of the Laboratory of
Marine Biology in Fano (University of Bologna) ”**

© SUSHI DROP

can significantly contribute to data collection and determining the situation in the field of research. Depending on the goal and purpose of the research, it may be the only method or it may be used as an additional technology. The advantages of using drones are the reduction of risks associated with the work of divers, the accuracy of the calculation of the abundance index of marine organisms and the ability to assess biodiversity at depth.

All the data collected and later analysed, will be published in an open access platform and will be available in Geo Database format on a GIS (Geographic Information System) platform, for the scientists, researchers, NGOs and all bodies and institutions dealing with the Blue Economy issues. These data will allow a deeper level of knowledge of the seabed both from the morphological and marine biodiversity point of view, supporting the improvement of the related policies aimed at preserving the marine environment.

The final aim is to combine the georeferenced information gathered by the UUVs and the one related to the spatial extent and patchiness of fishing pressures to better

understand the sensitivity of the habitats to those pressures and to design and implement more effective marine management plans.

The SUSHI DROP project also resulted in a proposal of possible measures for biodiversity protection, considering socio-economic factors. It is advisable to work more on modifying fishing equipment and techniques to reduce by-catches, increase the number of fish species for which assessments are made, establish, and harmonize national administrations for all major fishing areas and monitor climate change more closely. Among the recommendations are the diversification of fishing activities, the application of branding and certification of products obtained from the sea in order to improve their quality and increase value.

It is also important to promote an approach based on joint decision-making in fisheries and environmental protection, involving all relevant stakeholders: from fishermen to NGOs and decision-makers. Only a common approach can establish long-term sustainable fisheries in a preserved marine ecosystem and promote good practices and working methods that will reduce human pressure on the marine environment.

Project short presentation – Video
[www.youtube.com/
watch?v=bYly7dYZOWw](https://www.youtube.com/watch?v=bYly7dYZOWw)

Contact information
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 www.youtube.com/channel/UC5E0Zi03omkWs4mo3B3G-CA

ASFA supports project to collect research and data from southeast Asia in support of SDG 14.4.1.

This article introduces a new project - “Collection of Research and Datasets from data-poor countries in Southeast Asia related to SDG Indicator 14.4.1.” Organised via letter of agreement between FAO and Southeast Asian Fisheries Development Secretariat (SEAFDEC), the project will work with up to 15 institutions in southeast Asia to identify and record research publications and datasets related to fish stocks and their sustainable management.

14 LIFE BELOW WATER



Project background

The FAO ASFA Secretariat is very pleased to be supporting the project: “Collection of Research and Datasets from data-poor countries in Southeast Asia related to SDG Indicator 14.4.1— proportion of fish stocks within biologically sustainable levels.” The project can be split into three stages: firstly, agreeing a search methodology to identify research and data relevant to SDG indicator 14.4.1; secondly, up to 15 participants will be recruited and receive training on how to implement the search methodology and record results on OpenASFA; and, finally, an analysis of the results which will be published as a report at the end of 2022. ASFA will work with SEAFDEC through each of these stages, providing the support needed to ensure the successful project meets its goals and that hard to reach research and data needed to support SDG 14.4.1 is recorded on OpenASFA and made searchable through FAO webpages. This article provides context for ASFA’s support to the project, as well as an update on work so far and next steps.

ASFA’s support to this project is part of a wider drive to update the ASFA business model so that it more directly meets the needs of researchers, scientists and policy makers working in fisheries, aquaculture and other aquatic sciences. This new project with SEAFDEC builds on ASFA’s recent experience of supporting the CECAP-PESCAO

project to compile and inventory of marine fisheries research and analyse the research landscape, the final report of which was recently published (FAO, 2022).

With its international network of partners and newly launched OpenASFA data portal, ASFA is ideally placed to identify and record aquatic science research, making it discoverable to a wide audience via the search interface on fao.org and the full ASFA database on ProQuest. ASFA’s support to the CECAP-PESCAO project highlighted the difficulty of discovering grey literature online, particularly reports and research produced by fisheries institutions. The grey literature documents are of vital importance not only to researchers and those studying the geographic or subject area, but also to the policy makers, national and regional planners who seek to sustainably manage marine environments and resources.

Sustainable Development Goal 14 – Life below water is to ‘Conserve and sustainably use the oceans, seas and marine resources for sustainable development’ (www.un.org/sustainabledevelopment/oceans/). This goal comes with a number of targets with indicators to monitor their progress, one of which is SDG Indicator 14.4.1. - the proportion of fish stocks within biologically sustainable levels. Progress towards this indicator can be viewed on the FAO website: www.fao.org/sustainable-development-goals/indicators/14.4.1/en/ and for a

deeper understanding of this indicator there is an e-learning course, also available on fao.org (<https://elearning.fao.org/course/view.php?id=502>). In order to measure progress, information and data on a country’s fish stocks is needed, and this is where ASFA is able to assist. With a large and active network of members across Asia, ASFA is well placed to support the identification and recording of hard to reach research and data and has already begun working with SEAFDEC experts FAO Fisheries colleagues to formulate the search strategies and scope of the project that will be used to identify relevant resources.

OpenASFA – making fisheries research FAIR

OpenASFA is used by ASFA partners to create records for relevant research produced by their institution, or in the case of National ASFA Partners, in their country. OpenASFA’s focus is on hard to reach grey literature, which includes project reports, technical documents and dissertations and theses. This makes OpenASFA an ideal solution for the creation of records from data poor countries related to SDG14.4.1. From OpenASFA, records created as part of this work will be freely searchable on FAO.org, as well as on the full ASFA database hosted by ProQuest. This means the research and data recorded as part of this project will be freely discoverable on fao.org and also available on the full ASFA database, where it can be accessed by researchers and students worldwide.

In addition to recording research publications, this project will also record datasets related to fish stocks. This is a new initiative for OpenASFA and participants will have the option to upload the dataset itself, as well as completing a detailed record of the metadata. All datasets uploaded to this project will be free to access and

can therefore contribute to future studies on fish stocks in the area. By focusing on hard to reach data, the project hopes to make best use of participants time and uncover a range of resources that will be available in perpetuity to researchers and policy makers, helping to make decisions on best available evidence.

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<https://doi.org/10.4060/cb8788en>

First steps: Formulating a search methodology

The project officially began in January 2022 and already a search methodology has been agreed. This search methodology forms the backbone of the project and will be used to help participants identify relevant research and data. The methodology was composed by SEAFDEC Marine biologists and other experts at SEAFDEC departments, as well as FAO Fisheries colleagues. Included in the methodology are the subject keywords relevant to SDG 14.4.1, as well as any which should be excluded. Geographic areas the project will focus on are listed and taxonomic species are also included. Example searches using online sources, including the ASFA database on ProQuest, have already been conducted using the methodology with results exported to an Excel sheet. This provides examples of resources considered relevant to the project and will be used by participants to cross check their resource against, so that their time is focused on recording research and data not already available online.

Next steps – capacity building and analysis

Potential participants in this project are being contacted with the aim of conducting the training in the summer of 2022. Training will cover not only how to search for relevant materials but also how to record them on OpenASFA thereby building on the capacity of participants to make their research visible and accessible to a wide audience. Once the training is completed and relevant materials recorded on OpenASFA, an analysis of results will be undertaken and presented in a report which we hope to publish by end of 2022. We look forward to sharing the results of this project in the next issue of the ASFA magazine, and for any questions about this project, please email: ASFA-Secretariat@fao.org.



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Researchers, Publishers and Librarians – Share your work on OpenASFA!

This infographic presents how and why authors, publishers and managers of aquatic science, fisheries and aquaculture research should use OpenASFA to share their data and information.

Why OpenASFA?

OpenASFA is a Virtual Research Environment for the creation, storage and export of records related to all aspects of aquatic sciences. OpenASFA covers both research publications (journal articles, books, chapters) and datasets. The aim of OpenASFA is to make hard to reach research discoverable. The ASFA Secretariat works with a network of over 100 institutions worldwide in order to promote their research outputs and meet their research needs.

Benefits of OpenASFA: Making research FAIR



FINDABLE

OpenASFA records are assigned detailed metadata to allow for detailed and accurate searching – helping users **find** the research they need.



ACCESSIBLE

From OpenASFA, records are exported to a search interface on FAO.org and the full ASFA database on ProQuest, increasing the **accessibility** of your research.



INTEROPERABLE

The ASFA thesaurus used to describe OpenASFA records uses unique and persistent identifiers allowing **interoperability** with other data systems.



REUSABLE

Datasets can be stored on OpenASFA allowing them to be accessed and **reused** by scientists, researchers and policy makers worldwide.

How to add your research to OpenASFA



Records can be created on OpenASFA by manual input, which is a time effective way to create detailed metadata records for publications and datasets. Alternatively, OAI-PMH compliant repositories can be harvested by OpenASFA to allow for the automatic import of records.

Ways to contribute to OpenASFA



OpenASFA Contributor

Research can be added to OpenASFA either through manual input or harvesting. The ASFA Secretariat is happy to discuss your needs and requirements, providing training or technical assistance so that your research can be added to OpenASFA. No formal agreement is needed for this and contributions can be on an ongoing or one of basis.



ASFA Associate

An institution can join the ASFA Partnership as an Associate. No formal agreement is signed however new associates must be first approved by the ASFA Secretariat and publisher ProQuest. Associates are given complimentary access to the full ASFA database, hosted on ProQuest, as well as training and support to effectively contribute to OpenASFA. Associate membership lasts for two years and is designed to act as a feeder to becoming a full ASFA Partner.



ASFA Partner

In order to join as an ASFA Partner, an institution signs a formal agreement agreeing to fulfil certain responsibilities in return for entitlements such as free access to the full ASFA database on ProQuest. ASFA Partners are members of the ASFA Advisory Board which helps guide the future direction of ASFA, deciding on policy and technical matters.

Summary of the responses to the ASFA Associate quarterly survey

The ASFA Associates programme has been running for two years now. Open to fisheries, aquaculture or related institutions who would otherwise be unable to afford subscription to the ASFA database, becoming an Associate provides an institution with complimentary access to the ASFA database on ProQuest in return for providing feedback on its use and exploring ways to contribute to ASFA's information products and services. This article provides a summary of the latest survey, conducted with ASFA Associates in March 2022.

Out of 31 ASFA Associates, **17 (55 percent)** completed the quarterly online survey asking about usage of the ASFA database, training needs and motivation for participation in ASFA.

These are:

1. Lake Tanganyika Authority (Burundi)
2. TECHINFORMI (Georgia)
3. Institute of Food Safety, Animal Health and Environment "BIOR" (Latvia)
4. Nigerian Institute for Oceanography and Marine Research (NIOMR) (Nigeria)
5. AltaiNIRO - Altai Branch of VNIRO (Russian Federation)
6. BaikalNIRO - Baikal branch of VNIRO (Russian Federation)
7. NIIERV - Krasnoyarsk branch of VNIRO (Russian Federation)
8. Tyumen branch of VNIRO (Gosrybcenter) (Russian Federation)
9. Sakhalin branch of VNIRO (SakhNIRO) (Russian Federation)
10. AtlantNIRO - Atlantic Branch of VNIRO (Russian Federation)
11. Kerch State Maritime Technological University (Russian Federation)
12. T.I. Vyazemsky Karadag Scientific Station (Russian Federation)
13. Information Resource Centre, Secretariat of the Pacific Regional Environment Programme (SPREP) (Samoa)
14. Institute of Marine Biology of the NAS of Ukraine (Ukraine)
15. Dirección Nacional de Recursos Acuáticos (Uruguay)
16. Vietnam Institute of Oceanography (VNIO) (Viet Nam)
17. Department of Fisheries. Ministry of Fisheries and Livestock (Zambia)

Access to and usage of the ASFA information products

Most institutions were able to access the ASFA database on ProQuest, with only a few reporting any difficulties. The ASFA Secretariat will liaise with ProQuest regarding access for the institutions concerned. Lack of knowledge on searching the ASFA database was mentioned as a reason for not promoting a usage of the database. The Secretariat will arrange a training session on using the ASFA database on ProQuest platform and also look to disseminate training and promotional materials to Associates. One further reason mentioned was that an industrial strike that affected access to the database.

When asked when they last searched the ASFA database, over half (53 percent) reported having searched it in the last six months. Of the rest, 29 percent had last searched it over six months ago and three responders had never searched the database. The ASFA database contains over 4 million records related to aquatic sciences and is a useful source not only of academic, peer-reviewed journals but also hard to reach grey literature produced by fishery institutions across the world. The ASFA Secretariat therefore hopes the number of Associates searching the database will increase as more training opportunities are provided.

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OpenASFA

Whilst ASFA Associates are not obliged to create OpenASFA records, they are encouraged and it is hoped that in this way the Associates programme will act as a feeder programme to becoming a full ASFA Partners. Whilst it is encouraging that 94 percent of survey respondents had heard of OpenASFA, less than a third had registered for OpenASFA and only two had created records. A further nine are interested in creating records and the the ASFA Secretariat will be in contact and arrange a training session. When it came to accessing the search interface for OpenASFA records, available on fao.org, ten of the 17 respondents had visited the page.

In addition to creating records manually on OpenASFA, the ASFA Secretariat hopes to soon provide the option to harvest metadata from repositories. Five Associate institutions reported having an institutional repository; ten that they do not. The ASFA Secretariat will investigate the possibility of harvesting records from these institutional repositories. Some ASFA Associates contribute to other than institutional repositories and databases (AquaDocs, FAO Agris, e-library (Russian Federation) and Ciberleninka (Russian Federation), so their records could be harvested from these sources.

Increasing the visibility of research – motivations and challenges

Associates were asked their motivation for participating in ASFA. Of the 17 respondents that completed the survey, 14 said they were motivated by receiving free access to ASFA database; 10 respondents indicated Professional development (Learning and training opportunities provided by ASFA) as a motivating factor; lastly, 7 respondents are motivated by increasing the visibility of research.

When asked *what the challenges are to making their institution’s research output visible*, most respondents (9 out of 17) indicated that “Lack of skills/knowhow” was a challenge (see Figure 1). This is something the ASFA Secretariat can assist with, having provided training to countless partners on how to create detailed ASFA records, ensuring high quality metadata increases the findability of a resource. Happily, Associates reported a willingness to attend training which should help to counter this challenge and ensure Associates have the necessary skills to make their institution’s research visible:

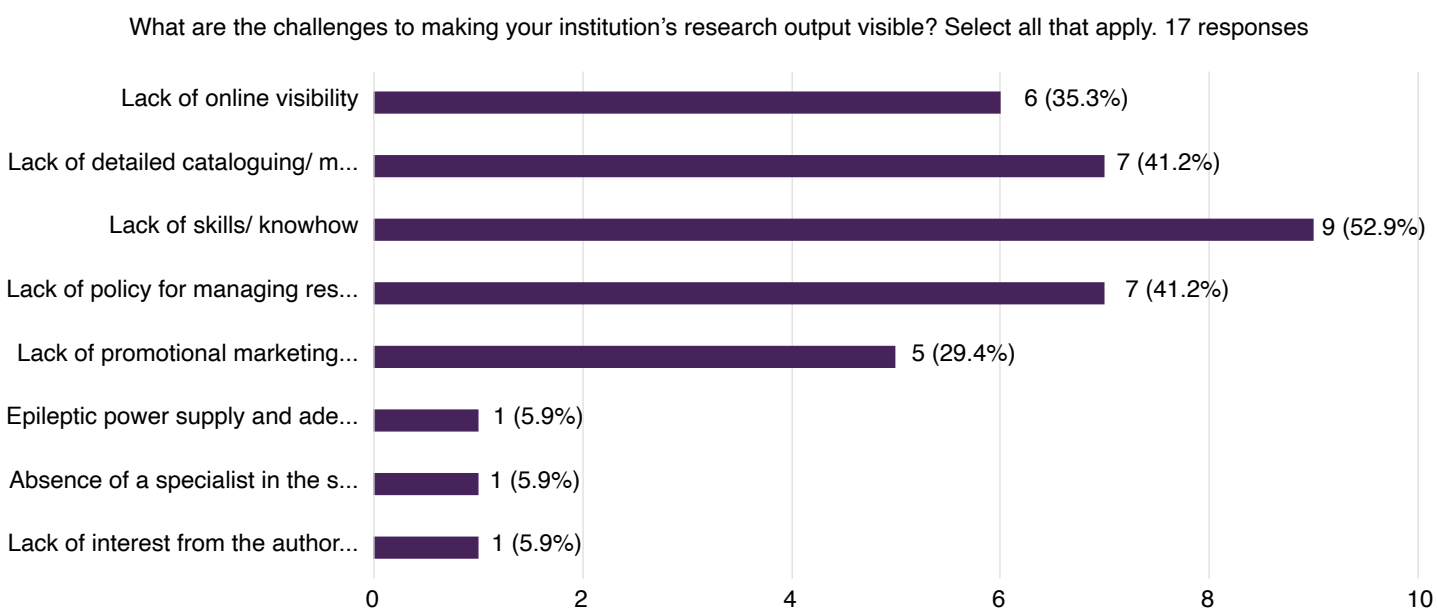
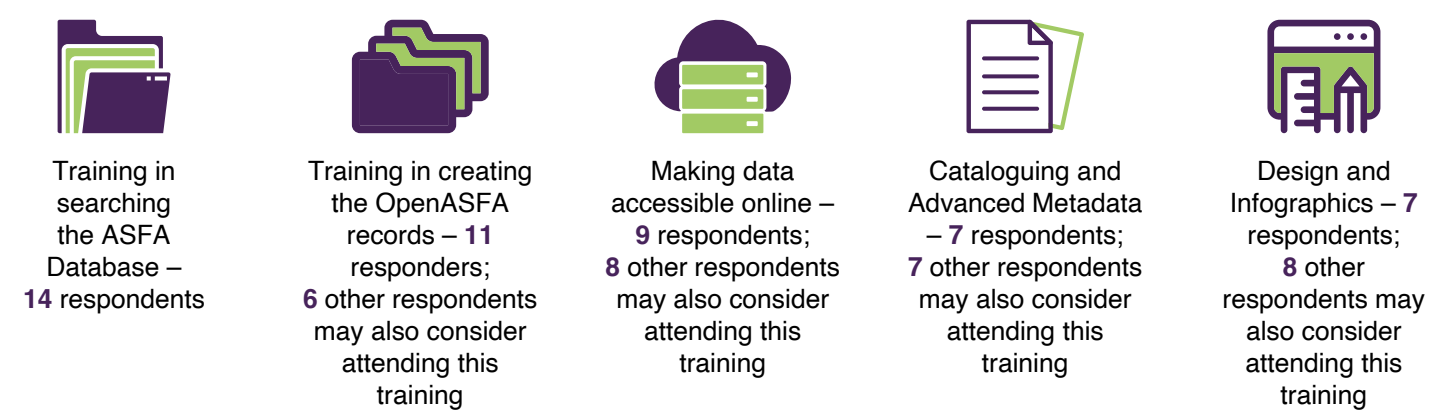


Figure 1: Responses to the question: what are the challenges to making your institution’s research output visible?

Allen Varley: 1932 – 2022

Allen passed away peacefully at home on 8th April 2022. A chartered librarian and Fellow of the Library Association, Allen worked in libraries in the West Riding and Cheltenham before moving to the Marine Biological Association (MBA), Plymouth, United Kingdom, in April 1967. His 25 years as Head of Library and Information Services at the Association saw him lead the growth of the library into one of the finest and most comprehensive in its subject area in the world, now recognised as the National Marine Biological Library. Allen also played an instrumental role in the development of international aquatic science information systems, including ASFA, Aquatic Sciences and Fisheries Information System (ASFIS) and European Association of Aquatic Science Libraries (EURASLIC).



Allen authored *ASFA: the first twenty years; an outline history of Aquatic Sciences and Fisheries Abstracts, 1971-1990* as well as contributing to ASFA's 50th Anniversary in the ASFA Magazine article: *Fifty years of ASFA: as told by the people who ensured its success*. Both former and current ASFA Partners will remember Allen and we would like to share this article for you, written by Ian Pettman, which commemorates Allen's career and notable contributions to aquatic science librarianship.

Arriving in Plymouth a few days after the Torrey Canyon oil disaster in 1967, when the whole resources of the Laboratory were being devoted to combating the oil pollution on the Cornish coast, gave Allen the opportunity to begin the introduction of services and systems designed to utilize the library's information resources, not only for Plymouth staff and visitors, but also to extend them to outside users. Projects inaugurated during the 1970s included the establishment of the Marine Pollution Information Centre; collaboration in ASFIS and ASFA; the provision of analysed data and information on toxic chemicals for European Commission and United Nations Environment Programme databases; the publication of a series of current awareness bulletins on marine pollution; and annual bibliographies of papers on British estuaries and coastal waters. These activities resulted in a regular flow of appreciable amounts of contract work and sales of library publications and services.

Working through an era when computing progressed from punched cards to compact discs, and when the information explosion on the one hand, and information technology on the other threatened to overwhelm libraries, Allen firmly regarded computers and databases

as tools and means to an end rather than ends in themselves. He resisted becoming committed to mainframe computers for day-to-day library applications, and successfully introduced a range of microcomputer-based library systems and bibliographic databases.

Allen's greatest strength, however, was in encouraging, building and supporting networks of people and institutions at national and international levels. From the early 1970s Allen collaborated in information projects with the Food and Agriculture Organization, with the Intergovernmental Oceanographic Commission of Unesco, and with other United Nations agencies, travelling extensively, and was active in promoting scientific information exchange, training, and the development of national, regional and international marine and freshwater information networks. He was a founder member of the United Kingdom aquatic sciences libraries group and a committed supporter of the fledgling International Association of Aquatic Sciences Libraries and Information Centres (IAMSLIC). In 1988 he organised a meeting in Plymouth which is now recognised as the inaugural meeting of the European Association of Aquatic Sciences Libraries and Information Centres (EURASLIC). Although he retired in 1992, he maintained an interest in developments in marine information systems, helping to develop and populate some of the first internet-based Web 2.0 fisheries and aquatic sciences databases in the early 2000's. He also secured and catalogued the MBA's rich archives. The aquatic information community is poorer without his vision and encouragement.



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<http://hdl.handle.net/1834/2656>

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WorldFish	ProQuest	Universiti Malaysia Terengganu (UMT), Malaysia	Direction des Pêches Maritimes, Senegal
Intergovernmental Oceanographic Commission (IOC), Belgium	United Nations Division for Ocean Affairs and the Law of the Sea (UN/DOALOS)	UN Environment Programme (UNEP)	Food and Agriculture Organization of the United Nations (FAO)
FAO-AdriaMed Project	International Commission for the Conservation of Atlantic Tunas (ICCAT)	Indian Ocean Tuna Commission (IOTC)	The World Conservation Union (IUCN)
Northwest Atlantic Fisheries Organization (NAFO)	Pacific Islands Marine Resources Information System (PIMRIS)	Southeast Asian Fisheries Development Center/Secretariat (SEAFDEC)	Secretariat of the Pacific Community (SPC)
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Centre for Scientific Documentation and Information Indonesian Institute of Sciences (PDII-LIP), Indonesia	Iranian Fisheries Science Research Institute (IFSRI), Iran (Islamic Republic of)	Marine Institute, Ireland	Società Italiana di Biologia Marina S.I.B.M. ONLUS, Italy
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Universidad Nacional Autónoma de México (UNAM), Mexico	Institut National de Recherche Halieutique (INRH), Morocco	INAHINA - Instituto Nacional de Hidrografia e Navegação, Mozambique	National Marine Information and Research Centre (NatMIRC), Namibia
National Institute for Freshwater Fisheries Research (NIFFR), Nigeria	Institute of Marine Research (IMR), Norway	Instituto del Mar del Perú (IMARPE), Peru	University of the Philippines Visayas, Philippines
Instituto Português do Mar e da Atmosfera (IPMA), Portugal	National Marine Fisheries Research Institute (NMFRI), Portugal	Instituto Español de Oceanografía (IEO), Spain	Institute of Marine Sciences (IMS), United Republic of Tanzania
Chulalongkorn University, Thailand	Central Fisheries Research Institute – Trabzon, Turkey	National Fisheries Resources Research Institute (NaFIRRI), Uganda	Budgetary Establishment "Methodological and Technological Centre of Aquaculture", Ukraine
Freshwater Biological Association, United Kingdom of Great Britain and Northern Ireland	Universidad de la Republica, Fac. Vet. Instituto de Investigaciones Pesqueras (IIP), Uruguay	National Oceanic and Atmospheric Administration (NOAA), United States of America	Ministry of Agriculture and Rural Development of Viet Nam, Viet Nam

OUT AND ABOUT WITH THE ASFA SECRETARIAT (AKA ASFA PINGUINI)

The FAO-ASFA secretariat have nicknamed themselves the ASFA pinguini – why?

Because, just like real penguins, ASFA is always in pole position!

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