



Inland Fisheries	2
Fisheries	
Management	4
Milestones	6
Fish Processing	7
What's New,	
Webby?	9
Fish Processing	10
WIF	12
India	16
Profile	19
Gender	20
Letter to Editor	23
Yemaya	
Recommends	24



From the Editor

The importance of research on safe and efficient post-harvest technologies in fisheries as well as the free and widespread dissemination of the research and the sharing of the technologies cannot be overstressed. This issue of Yemaya documents two initiatives in postharvest fish processing, one from Uganda and the other prototyped in Canada, that hold the potential to transform the health and fortunes of women fish processors in the small-scale fishing sector. Both technologies reduce exposure to smoke, involve less wastage, and yield quality processed products, and hence, better economic returns. Given the climate crisis, such initiatives are the need of the hour, crucially benefiting the environment by reducing biomass use. They are particularly important also because they free women from the need to constantly monitor fish processing operations and hence from the drudgery of work. It is equally the case however that traditional biases and local needs often restrict the uptake of these technologies, pointing to the need for efforts towards the customization and sharing of research and technology to meet diverse local needs.

A review of several studies of women in the small-scale fisheries sector from across the globe indicates that even where women have formal access to decision making in fishing communities, their actual participation is limited by patriarchal norms, which restrict gender equal participation in discussions and decisions. This type of exclusion has definite material outcomes, negatively impacting women's economic returns in the sector. However, as the articles from Costa Rica and Chile show, in cases where government support is made available to facilitate women's participation in decision making in cooperative fisheries groups, it leads to improved earnings for women; better representation of women in leadership; and better environmental outcomes. The case study from Malawi shows how important it is for mainstreaming efforts to go beyond the issue of equitable access to markets for women engaged in fish trade, and to include equity in pricing and returns for both women and men. The study also shows the importance of addressing gender biases in the ways in which women and men perceive discrimination.

When women's work receives focused attention, the importance of their contributions to the sector is duly revealed. Several research projects on mapping dried fish presented at the GAF-8 Conference in Kochi in November 2022, shed light on the substantial contributions made by women fishers in postharvest processing and trade. However, women's work is important not just in terms of their contribution to fishing and fish processing. The article from Tamil Nadu in India shows how in families, forced to migrate to larger cities due to dwindling economic opportunities in their native villages, women play significant and cohesive roles within the migrant community, often facilitating financial upscaling and social stability.

In a changing world where, on almost a daily basis, fishing communities face new economic, social, and environmental challenges, women often play central roles in holding communities together. It is critical therefore that the mainstreaming of women takes multiple routes, encompassing technology options, gender-inclusive policymaking, and continuous research to uncover the significant contributions women make to fisheries in multiple ways across the world.

Editor's Note: With great sadness we wish to inform our readers that our beloved cartoonist, Surendra, will no longer be able to render the Yemaya Mama cartoon strip. Our best wishes to Surendra - he will be dearly missed!

Equal work, unequal earnings

A recent case study in Malawi explores the trading roles of women in fisheries in quantitative and qualitative terms

By Emma Rice (riceemma@ msu.edu), Department of Fisheries and Wildlife, Michigan State University, United States, Abigail Bennett (benne592@ msu.edu), Department of Fisheries and Wildlife, Michigan State University, United States and Patrick Kawaye (pchimseu@luanar. ac.mw), Department of Agriculture and Applied Economics, Lilongwe University of Agriculture and Natural Resources, Malawi

Tomen play important roles in fish food systems, especially post-harvest processing and trading of fish products. However, gendered inequities in fish food systems are common around the globe, limiting livelihood benefits for many women and their households. To promote gender equity in the sector, we need to ask the questions: Do women make as much money as men? If not why?

To recognize the contributions of women to fish trade as well as understand their challenges, a recent project in Malawi, funded by the Alliance for African Partnership (AAP) Partnerships for Innovative Research in Africa (PIRA) grant, examined the trading roles of women in fisheries in quantitative and qualitative terms. Mixed methods are useful in gender analyses as the diverse types of knowledge complement

one another and provide a more holistic view of complex issues. In this research project, new insight into gendered inequities in small-scale fish trade were revealed by connecting specific gender norms, revealed through qualitative methods, to specific livelihood outcomes, measured through quantitative methods.

The research team, consisting of scholars from Michigan State University (MSU) and Lilongwe University of Agriculture and Natural Resources (LUANAR), collected genderdisaggregated market survey data from female and male fish traders throughout Malawi and qualitative data through separate focus groups with women and men fish traders.

Economic analysis of market data revealed that near-equal numbers of women and men are currently participating in fish trade in Malawi. While this finding indicates significant progress



Young fishermen from the Salima region (Malawi) repairing fishing nets seated on the beach. Economic analysis of market data revealed that near-equal numbers of women and men are currently participating in fish trade in Malawi



Women fish traders at Nkhotakota Market, Malawi. Equitable access to resources, including financial services and infrastructure, is necessary to facilitate equitable livelihood outcomes among genders

in the sector, there is still work to be done. The research team also found, that while women engage in the same trading activities at the same markets in similar numbers as men, women are earning less money per unit and tend to trade in smaller volumes.

Analysis of focus group data indicated that these differences in economic performance can be explained, in part, by gender norms which shape household decision-making regarding women's spending, limit women's access to resources including financial services and fish and maintain patriarchal power dynamics. Further, the team found that there remains a dominant narrative among men that gender does not impact economic earnings while women tend to understand gender as a barrier to economic success. This divide highlights the importance of engaging men in gender research to better recognize gaps in perceptions between genders.

This case study highlights the need to focus on gender equity in addition gender equality in fisheries. While gender equality, which focuses on equal opportunity, is a necessary first step for the improvement of conditions for women in fisheries, our study demonstrates that equality in participation is not sufficient. Once women have gained entry to participate in the sector,

DECEMBER 2023

gender norms continue to shape their success. Therefore, there is need for more transformative approaches to improve livelihood outcomes for women in fisheries.

This case study of fish trade in Malawi provides lessons for the broader fisheries sector. Applicable in many contexts, the research team outlined specific gendered challenges to be addressed by managers, policymakers, and practitioners, including lack of access to formal financial services, poor transportation, price volatility, lack of storage, and genderbased violence for small-scale fisheries actors. A key intervention toward improving livelihood outcomes for women in fisheries is improving access to capital for fish workers through formal financial services. Access to formal financial services has the potential to increase the volumes women trade in, thereby improving livelihood outcomes. Improved access to capital also helps to build adaptive capacity, enabling women to better respond to shocks. Additional interventions to improve adaptive capacity for fish workers include development of market infrastructure such as storage facilities. Equitable access to resources, including financial services and infrastructure, is necessary to facilitate equitable livelihood outcomes among genders.

Equitable access to resources, including financial services and infrastructure, is necessary to facilitate equitable livelihood outcomes among genders

Gender matters

Women's participation in small-scale fisheries management results in positive outcomes for both the local community and the social-ecological system

By Mouna Chambon, (mouna.chambon@ uab.cat), Institute of **Environmental Science** and Technology, Universitat Autònoma de Barcelona, Spain, Sara Miñarro, (saraminarro. science@gmail.com), Institute of Environmental Science and Technology, Universitat Autònoma de Barcelona, Spain, Santiago Alvarez Fernandez, (santiago.alvarez. fernandez@gmail.com), Institute of Environmental Science and Technology. Universitat Autònoma de Barcelona, Spain, Vincent Porcher, (vincent. porcher@uab.cat), Unité mixte de recherche "Savoirs Environnement

Sociétés" (SENS), Institut de recherche pour le développement (IRD) & Centre de coopération internationale en recherche agronomique pour le développement (Cirad). Montpellier. France, Victoria Reyes-Garcia, (victoria.reyes@ uab.cat), Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain, Huran Tonalli Drouet, (htdrouet. cruz@gmail.com), Université libre de Bruxelles, Avenue Franklin Roosevelt 50, 1050. Bruxelles, Belgium and Patrizia Ziveri, (patrizia. ziveri@uab.cat). Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain

espite women making up about 50 percent of the fisheries workforce worldwide, their contribution to the sector has long been under-estimated with implications for fisheries management and food security. This is because, in many countries, fisheries definitions are narrow and tend to focus on the production node of the value chain whereas women are mostly involved in fish processing and marketing. Genderbiased approaches in fisheries research have also contributed to mask the important role played by women in fisheries economies. In this context, this study sought to assess women's participation in small-scale fisheries (SSF) management and the related socio-cultural, environmental, and economic impacts.

To do so, we reviewed the existing literature on the topic using two search engines: Web of Science (WoS) Core Collection and Scopus. Our review included 124 case studies from 51 countries which examined women's participation in SSF and discussed management issues (Fig.2). We defined three main levels of participation in SSF management: excluded, limited, and active participation. Based on this categorization, we assessed women's participation level in each of the reviewed case study. Further, we examined the impacts derived from women's participation in such processes and classified them as socio-cultural, environmental, or economic. We also considered the scale of each impact to determine whether it affected only individuals, the community, or the whole social-ecological system.

The most striking finding of this study is that women were not actively participating in SSF management in 80 percent of the reviewed cases that gave enough information to assess women's participation. In most cases, authors reported that women were not formally excluded from SSF management, but they faced barriers to actually participate, highlighting the importance of gender norms and stereotypes. Women would usually attend management meetings but would keep quiet and not contribute meaningfully to the discussions.

Moreover, our findings show that women's exclusion from SSF management was associated with negative outcomes. The most common negative impact was adverse consequences on women's livelihoods derived from their lack of participation in SSF management. As an illustration, research work done by Rohe and colleagues in 2018 in the Solomon Islands examined the consequences of a marine

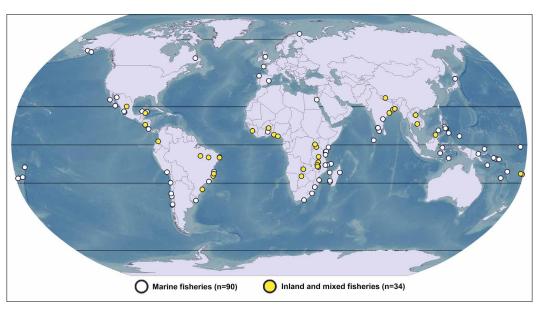


Figure 1- Geographical location of the 124 case studies, per fisheries type. The map was built under QGIS 3.22.7, using bathymetric data from General Bathymetric Chart of the Oceans (gebco.net)

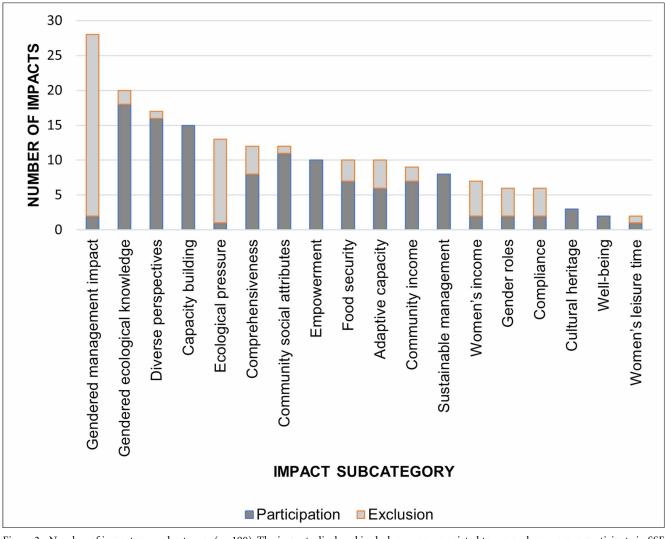


Figure 2 - Number of impacts per subcategory (n=190). The impacts displayed in dark grey are associated to cases where women participate in SSF management (i.e., limited or active participation) whereas impacts in light grey are those associated to women's exclusion cases

closure designation overlaying with women's fishing grounds and found out that it had severe implications on local food security. However, our study also highlighted that when women were able to participate actively in SSF management, it resulted in positive sociocultural, environmental, and economic impacts not only for local communities but also for the entire social-ecological system.

As an example, a study by Rivera and colleagues in 2017 in Costa Rican SSF communities documented how the active participation of women in a fisheries cooperative led to positive individuals impacts. Located on the Pacific coast of Costa Rica, the community of Tárcoles highly relies on SSF activities for its local economy and nutritional needs, but faces several challenges such as pollution, declining fish stocks and mass tourism. To address these issues, governmental support combined with the adoption of a fisheries co-management approach led to the establishment of the CoopeTárcoles R.L cooperative in the 1980s. Since then, this SSF cooperative has become one

DECEMBER 2023

of the most successful fisheries cooperatives of the country, promoting sustainable fisheries management and supporting women's participation in management and governance. Although women did not own boats, which was an initial criterion for joining the cooperative, the recognition of their important role in preproduction and fishing activities gave them access to the cooperative membership. As the researchers stated: "Slowly, CoopeTárcoles R.L has been expanding beliefs on the role of women, promoting the fact women can and do play an active role and contribute on a daily basis to the community's economic, social, and cultural life". Overtime, women gained more power within the cooperative by holding notable leadership positions such as members of the Administrative Council, the Board of Directors and Vice-President. Through their experience in the CoopeTárcoles R.L cooperative, women built in capacity, gained leadership and business skills, and improved their confidence.

Another example is the story of women's participation in fisheries co-management in the

Through their experience in the... cooperative, women built in capacity, gained leadership and business skills, and improved their confidence

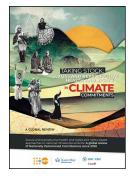
Biobio region, south-central Chile, documented by Franco-Meléndez and colleagues in 2021, which provided positive benefits to SSF workers and the environment. In Chile, the main fisheries co-management approach is embodied in the Management and Exploitation Areas for Benthic Resources-MEABR system. It is perceived as an efficient approach for promoting both sustainable use of fisheries resources and the participation of local resource-users. Owing to their engagement in fishing and seaweed women acquired important harvesting, rights in participating to the MEABR system despite the long-lasting view that fishing as a male domain. Specifically, in Coliumo Bay, women's participation in the MEABR system enhanced their empowerment. According to the researchers: "The views of women have become more important in fishery management, for example, where women have increased their capacity, confidence, and engagement for good fishery practices". In addition, the recognition of women's perspectives in SSF management has notably favoured ecological outcomes in

management decisions and the conservation of natural resources. To quote the researchers once more: "MEABR's that are run by women also have an ecological focus with a reorientation to seaweed collection".

These are only a few illustrations from our study suggesting that women's participation in SSF management contributes to positive outcomes for the social-ecological system. Overall, our study highlighted the critical need to address women's exclusion from SSF management and decision-making processes and tackle the lack of gender-disaggregated data in fisheries research. We concluded by providing key recommendations towards a better inclusion of gender considerations in fisheries data collection methods, SSF management, and ecological research on SSF. This study is relevant for academics, practitioners, and policy makers in the field of sustainable development, fisheries, and food systems. To read the full paper, please visit: https://link.springer.com/article/10.1007/s11160-023-09806-2 Y



By Ahana Lakshmi (ahanalakshmi@gmail. com), Independent Researcher, Chennai, India



A tangled web that needs urgent action

The impacts of climate change are many and distributed. While extreme events, enhanced in frequency or intensity by climate change, may not cause as many causalities as they did in the past, they disrupt many services. Among these, disruption in health services, including those that address sexual and reproductive health and rights (SRHR), gender-based violence (GBV) and preventing harmful practices against women and children, are a growing concern.

A report released by the United Nations Population Fund (UNFPA) in October 2023 attempts to assess whether and how these concerns have been globally addressed in the Nationally Determined Contributions (NDC) since 2020. While NDC only list a nation's priority actions and may not detail sectoral actions, nevertheless, of a total of 119 NDC examined, 117 did mention health issues in their submissions. However, only 38 countries included in their submissions issues related to SRHR, GBV and other harmful practices; with countries in east and southern Africa and Latin America and the Caribbean taking the highest share. SRHR references typically were about maternal and newborn health with only a handful of references to sexual and reproductive health information and services. The lack of mention of abortion and postabortion care are of particular concern. GBV has been correlated with food and livelihood insecurities caused by climate change impacts.

Reproductive health is a human right and SRHR needs are ever important. These are usually highlighted during humanitarian crises but recognizing climate change's impacts on SRHR is an important milestone. This study shows a significant lacuna in many of the NDC. The existing structural drivers of inequality in society are often a tangled web causing non-uniform impacts. Climate change exacerbates these in the case of women and sexual minorities. Thirteen recommendations under four themes are listed; of these, the call for disaggregated data to inform appropriate interventions and providing appropriate financing, especially in underserved topical areas as SRHR and GBV, is crucial. It is hoped that the next NDC will address this issue more comprehensively.

The report 'Taking Stock: Sexual and Reproductive Health and Rights in Climate Commitments: A Global Review' is available at https://www.un-ilibrary.org/ content/books/9789213585726

The NARO PAH-safe fish smoking kiln

Greater support is needed for the adoption of a safe and effective fish smoking technology, associated with numerous positive socio-economic outcomes

By Margaret Nakato,

(katosiwomen@katosi. org), Katosi Women's Development Trust, Uganda

moking fish is one of the most common methods of food preservation among fishing communities in Uganda. The most common species that fishing communities smoke include Nile Perch and Tilapia. However, one of the main hazards associated with traditional smoking methods is the risk of cancer due to Polycyclic Aromatic Hydrocarbons (PAHs), which are cancer causing compounds, generated in traditional fish smoking processes. The PAHs are a result of burning toxic compounds present in the firewood used for smoking fish. Consistent exposure to PAHs has been linked to increased incidences of lung, skin, and bladder cancers. In this context, the introduction of a new technology, the NARO PAH Safe Fish Smoking Kiln, comes as a boom to the at-risk population of women fish smokers. Invented by the National Agricultural Research Organization (NARO), the NARO PAH Safe Fish Smoking Kiln, does not only improve the quality of smoked fish products but dramatically reduces PAH levels, making fish smoking a much safer occupation.

The kiln consists of three chambers; the smoking chamber, filtration chamber and the dehydration chamber. The smoking chamber produces the smoke which goes through the smoke delivery pipe to the filtration chamber. At the filtration chamber, the bad smoke is separated from the good smoke which goes to the dehydration chamber. The good smoke passes on to the fish towards the outlet giving the fish a golden-brown color and smoky aroma. The bad smoke is retained at the lower part of this filtration chamber and drained out in liquid form. This smoke is high in PAH content. The smoking process is completed through heat generated from charcoal trays beneath the dehydration chamber.

Beyond health benefits, the NARO PAH-Safe Fish Smoking Kiln has improved the working environment of fish processors. Globally, fish



A female fish processor from Bugoye women's group using NARO PAH-Safe fish smoking kiln. The NARO PAH Safe Fish Smoking Kiln reduces smoking time, thus freeing women to attend to other productive roles

KATOSI WOMEN DEVELOPMENT TRUST



The fumes produced by the open fire kiln are impacting the fish processor's eyes, causing discomfort and frequently leading her to shut her eyes during the process. One of the main hazards associated with traditional smoking methods is the risk of cancer due to Polycyclic Aromatic Hydrocarbons (PAHs)

processing is a female dominated sector but many women fish processors, often with the children under their care, have for decades suffered the adverse effects of smoking fish using open fire kilns. Studies show that PAHs are particularly toxic to breast feeding mothers, and improving their working conditions is essential for the health of the mother and children. The kiln creates a smoke-free environment and reduces exposure to burns. Traditional smoking methods forced women to spend nights monitoring the processing to ensure that the fish didn't get burnt. The NARO PAH Safe Fish Smoking Kiln reduces smoking time, thus freeing women to attend to other productive roles. Further, open fire kilns exposed the fish to theft, a risk that is considerably reduced with the use of the new kiln which is designed with a focus on safety. The controlled smoking process, coupled with the reduction of cancer-causing compounds, helps prevent rapid spoilage. This not only reduces food wastage but also offers economic advantages to those in the fish preservation industry. Women users, who have benefited from the new technology, readily offer testimonies of appreciation.

"I can load the fish and do other house chores or even go to the market unlike before when I would have to monitor the whole process so that the fish did not get burnt." says a member of Muwumuzza women's group in Gonze village.

"Using the smoking kiln requires minimal effort. I remember when one of the fish processors instructed his 15-year-old daughter to watch the fish smoked and she was able to monitor the fish for hours and adjust the trays without challenges," reported a community member from Bugula women's group in Bugula.

"Our fish products remain clean and free from foreign materials like dust, flies, and rodents, ensuring food safety. Unlike traditional kilns that produce a lot of smoke from firewood, the NARO-PAH fish kiln encloses the smoke. This prevents direct exposure to bad smoke which could lead to vision impairment over time," reported a member of the Katosi Women's Fishing and Development Association.

"The smoking kiln ensures uniform drying of fish. This maintains high quality with even distribution of heat unlike what could happen in an open fire or traditional kiln," said a member from the Bugoye women's group in Bugoye.

"This kiln is effective regardless of weather conditions. It can be operated without being affected by rain, ensuring that our products are safe from spoilage caused by weather changes," shared another fish processor from the Bugoye Women's group.

Despite evidence of the advantages of this technology, distribution and adoption are still very low. Within KWDT groups, only six of the 44 groups have been able to access and use the technology in collaboration with the GIZ Responsible Fisheries Business Chains Project (GIZ RFBCP). Additionally, within the six groups, only three are actively and efficiently using the kiln. The low distribution is attributed to the high cost of the smoking kiln priced between USD 4,478 to 18,973. Mechanisms to support access of improved technology are lowly funded hence limiting ability to promote and adopt use of the technology.

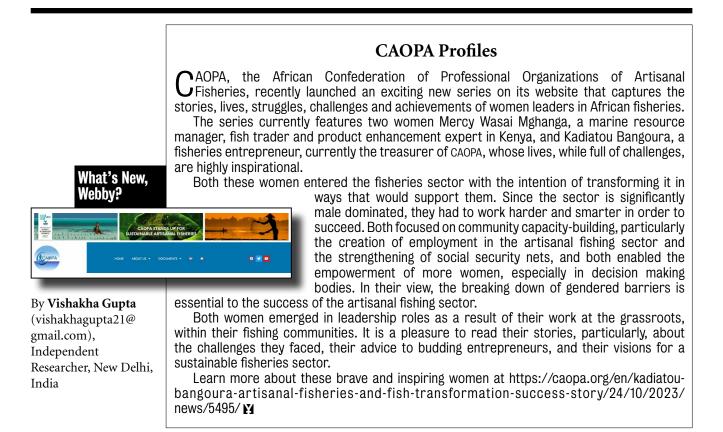
Additionally, the technology, like any other, requires capacity building for one to understand it's use, functionality and overall benefits. The Katosi Women Development Trust (KWDT) initiated several efforts to widen the adoption of the new kilns. It organized the training of 221 fish processors with 188 female and 33 males, with support from GIZ RFBCP. However, most fish processors in Uganda, are still unaware of the use, functionality and benefits of the new technology.

Furthermore, the fishing sector is marred by illegal fishing. Undersized and low priced fish dominate the market. PAH-Safe fish products demand better quality fish to offset the cost of using charcoal instead of wood fuel. Poor households are not willing to pay higher prices and the situation is exacerbated by lack of awareness on the benefits PAH-Safe fish product. "PAH -Safe fish product is not for everyone; it is for high end consumers," remarked some of the processors. The market demand and competition has driven many fish processors to return to the open fire kiln.

KWDT has also tried to support women engaged in legal fishing with micro financing options, in partnership with SwissHand, and with legal fishing gear, in partnership with arche noVa. However, declining fish stocks and the widespread use of illegal fishing methods have further constrained women efforts to build stable and high niche market for their fish products. They also lack access to cold facilities which would allow fisheries resources to be stored at scale for smoking.

Regulations to curb illegal fishing have resulted in further negative consequences for fish smokers. Enforcement measures by the Fisheries Protection Unit (FPU) led to restrictions for smoking fish. "Even if you have mature fish, you will be denied permission," say despairing fish processors. Most community-run fish smoking and processing sites fail to meet gazette standards.

For the successful adoption of the PAH-Safe Fish smoking kiln technology in Uganda, what is needed is widespread awareness among processors and consumers coupled with support enabling fish processors to access and use the technology. Additionally, continued efforts are required to combat illegalities in the fisheries sector so that safe fish smoking is widely and effectively sustained.



DECEMBER 2023

Making fish smoking safe and sustainable

A simple yet efficient new technique to smoke fish prototyped recently holds great promise for effective and sustainable postharvest fish processing

By Kafayat Fakoya,

(adikafayat@gmail.com), Associate Professor, Department of Fisheries, Lagos State University, Nigeria), Ayojesutomi Abiodun-Solanke, (tomi. solanke@fcfmt.edu.ng, Senior Lecturer, Fisheries Technology Department, Federal Department of Fisheries and Marine Technology, Nigeria), Adenike Boyo (adenike. boyo@lasu.edu.ng, Professor, Department of Physics, Lagos State University, Nigeria), Dr. Shehu Akintola (shehu. akintola2@gmail.com, Professor, Department of Fisheries, Lagos State University, Nigeria), Kafayat Ajelara (kajelara@gmail. com. Senior Lecturer. Department of Zoology and Environmental Biology, Lagos State University, Nigeria), Mayowa Olasope (Lecturer II, Department of Zoology and Environmental Biology. Lagos State University, Nigeria), and Ismot Olabamiji, (MSc student, Department of Fisheries, Lagos State University, Nigeria)

n a bid to revolutionize fish processing methods and promote sustainability, a pilot study of a prototype fish drum oven was recently carried out. The study used innovative technology to address the limitations of traditional fish smoking techniques while ensuring the preservation of nutritional value and product quality. Based on Participatory Approach Research (PAR), the study was part of the Project ID 57 of the Gendered Design in Science, Technology, Engineering, Arts and Mathematics (STEAM) programme being carried out by Carleton University in Ottawa, Canada in Low Medium Income Countries (LMIC) with support from the International Development Research Centre, Canada.

Traditional fish smoking methods have long been employed in Lagos and other coastal regions in Africa, but they often come with significant challenges. Traditional ovens, dryers or kilns do not only consume high volumes of firewood but also make work harder and more time-consuming, produce suboptimal product quality and are associated with many health hazards. Despite the issues that characterize traditional or local fish smoking technologies, most women smokers in the small-scale fisheries value chains are still culturally bound to these outdated techniques. The biases against the uptake, replication and scaling up of modern or improved fish smoking technology can also be traced to lack of innovation in design, construction, and technology transfer among researchers, technologists, and end users.

The prototype drum oven used in the study was a gender-responsive intervention, and although similar to local drum oven technology, its design features are modern and appealing. The fish drum oven is a specially designed apparatus that utilizes a combination of heat and smoke to process fish. It consists of a drumshaped chamber and stainless-steel trays, with an inbuilt temperature gauge and a smoke control mechanism in the form of an oil collector which acts as a screen to prevent smoke exposure to the fish being dried, and, at the same time, prevents fat dripping into the fuel.

The prototype was developed to promote the use of carbonized biomass briquette (CBB), a renewable, biodegradable, smokeless energy source that can reduce carbon footprints and mitigate deforestation by offering an ecofriendly substitute for wood-based fuels, such as charcoal and firewood and coal. The prototype thus contributes to the green economy in fishing communities, farming communities as well as urban communities. Since CBB is made from organic materials, when used in fish smoking, it produces no flames and little or no smoke or soot. This also means that the emission of noxious chemicals such as Polycyclic Aromatic Hydrocarbons (PAHs), dangerous for the health of women smokers and consumers of smoked fish, are substantially reduced.

The construction materials, which are hygienic and food-grade, as well as fabrication skills used to build the oven are locally sourced and materials. Its circular design ensures that there are no dead zones and that the heat distribution within the drying chamber is uniform. The even cooking ensures consistent texture, appearance, and taste across all samples. The major components of the oven are detachable, and the wheels at the base make the oven portable and ideal for use in any location, including social gatherings or events. The oven may be used to smoke and dry not just fish but many other types of food, such as poultry, beef, and mutton. When used in combination with CBB, it can be safely used within the home during inclement weather.

Operable by a single person alone, the oven does not require special skills or technical experience to load the raw fish and offload the smoked product. Although the oven is manually operated, its use is neither physically exhausting nor time-consuming. Since monitoring the process is no longer required, women fish processors can enjoy more free time to engage in other activities. The compact size of the



The compact size of the prototype together with ease of use makes it ideal for microscale entrepreneurs interested in starting their own fish processing business

A male fish processor. Operable by a single person alone, the oven does not require special skills or technical experience to load the raw fish and offload the smoked product

prototype together with ease of use makes it ideal for micro-scale entrepreneurs interested in starting their own fish processing business.

The positive outcomes of the pilot research suggest that the prototype fish drum oven holds great potential for the small-scale or artisanal fishing communities where traditional drum ovens are widely used. The adoption of this technology could enhance the quality of smoked fish products, increase profitability for fish smokers, and contribute to sustainable postharvest fisheries. However, further research and investments are needed to refine the technology, optimize production processes, and address any challenges that may arise during scale-up.

Interview with Editrudith Lukanga, Environmental Management and Economic Development Organization (EMEDO), Tanzania

This interview with Edithrudith Lukanga (elukanga@gmail.com), Secretary General of AWFishNet and Technical Advisor at EMEDO, Tanzania was conducted by N. Venugopalan (icsf@ icsf.net), Programme Manager, ICSF



Please share some of your experiences of working with women in the fisheries sector.

In Tanzania, I founded an organization called Environmental Management and Economic Development Organization (EMEDO). As part of implementing the SSF guidelines, under an FAOsupported project titled "Implementation of the Small-Scale Fisheries Guidelines for gender equitable and climate resilient food systems and livelihoods", EMEDO implemented a project on the capacity building of women and facilitated a number of consultative workshops in various fifteen districts in Lake Victoria. We learnt a lot of things. Just imagine, in the same district there are fisheries officers and community development officers who are working with the same group of women but don't communicate with one another. For example, the community development office facilitates loans to women's groups and individuals operating in the fisheries. When they get loans, women invest back in fisheries. However, being ignorant of the legislation governing the fisheries sector, they may buy fish which are undersized. In this case, if they are caught, the fisheries officer will confiscate all their fish and the women will lose their capital. So, we train them on the regulatory framework governing the fisheries sector to avoid such issues. These consultations have led to the strengthening of the women fish-workers network in the Lake Zone. They elected their leaders to coordinate district and regional processes and have a zonal executive committee. They make personal contributions to organize meetings and have also started a fund to reduce the challenges they face with access to funding.

Could you also share some examples of women's organization and mobilization?

The continental network of women in the small-scale fisheries in Africa, AWFishNet, was established in April 2017 with the support of the African Union-Interafrican Bureau for Animal Resources (AU-IBAR), as a platform for women fish processors and traders in the continent. This platform allows for the sharing of experiences: what is working and what is not working and why. It advocates for issues affecting women's activities and facilitates an enabling environment to enhance their role in the fisheries sector as women. In terms of

mobilizing, because AWFishNet encompasses the whole value chain members, its members are national networks of women fishworkers. AWFishNet tries to strengthen the small and medium enterprises women run by fish processors and traders by expanding most of their markets and marketing opportunities. Immediately after establishing AWFishNet, we developed a plan of action. One action was that representatives when they go back, should work with the line ministries responsible for fisheries in their countries to facilitate establishment of national platforms where they do not exist or to strengthen which are already existing. The Tanzanian process had started even earlier. In 2016 in Tanzania, EMEDO in collaboration with the Ministry responsible for Fisheries, organized a national workshop to raise awareness of the SSF guidelines. This workshop was informed by the study conducted by EMEDO on the role, the place, the challenges and the opportunities of women fish workers in the small-scale fisheries in the Lake Victoria region. One of the main recommendations was to facilitate formation of the national network of women in SSF. This workshop was also a steppingstone to the Ministry's collaboration with the FAO for the implementation of the SSF guidelines.

The implementation of the SSF guidelines was the focus of a research study conducted in 2018 by EMEDO, coordinated by the Ministry responsible for Fisheries with funding from the FAO. It looked at how women are organized in all the five regions that have water bodies in Tanzania. The outcome of that study informed the establishment of Tanzania Women Fishworkers Association or TAWFA in 2019, which also became a member of AWFishNet. This is the process on the mobilization went. We asked some 200 women's groups if coming together in a national platform is a good idea. All the group representatives said yes to the idea because women in the fisheries value chain are not recognized, not appreciated and are always the last in everything. Having this national platform will amplify their unified voice and influence. And we are seeing it happening.

How does your work amplify women's voices?

When women come together in a national platform, it gives them space; it gives them



Editrudith was facilitating a workshop with group leaders of women fishworkers in Lake Victoria, during one of the consultative workshops held in Mwanza region

a moment to sit together and share their experiences. In Tanzania, we have the three great lakes, the Indian Ocean, and other small waterbodies, which includes both small lakes and very big rivers. EMEDO has worked closely with the Ministry to structure this national network into sub-chapters. Through the national network, women have been supported with a number of initiatives, including trainings and linkages with various actors. For example, immediately after the platform was launched, EMEDO conducted a training on transformative leadership for the coordination committee members to equip them with skills to perform their national leadership roles. I say with confidence that TAWFA could serve as an example of how to strengthen women's organizations in the country. We had a meeting with Civil Society Organizations (CSOs) working in the fisheries sector in the country. The Ministry then identified strong CSOs that are working in each waterbody area with the intention of supporting those sub-chapters. Some groups are a bit ahead; some are just starting out; some are in the middle. If there are strong groups with strong sub-chapters, they are able to knock on any door at whatever time they want. These groups are invited to a number of meetings at the national level; they organize their own meetings too with our

DECEMBER 2023

support; and they often invite high level officials from the ministry to these meetings. As EMEDO, our role was to train women on transformative leadership. The trainings have indeed been very transformative and enabled the confidence that women brought to their leadership roles.

Are the challenges faced by AWFishNet networks similar in the different African countries or quite different?

Generally, I would say the challenges are similar, but they are contextual. There are differences based on the culture and on the type of fishery. The differences are informed by a number of processes as well. These networks together examine their policies to see how best they can influence policies at the African Union level so that these may trickle down in terms of influencing individual countries. For example, in 2020-21, AWFishNet in collaboration with other partners like universities, WorldFish and so on, conducted a study that looked into the impact of Covid-19 on women fish processers and traders in sub-Saharan Africa. As were conducting the study, we could see the diversity when it comes to the challenges, and that is why I am saying they are contextual. However, this study led AWFishNet into designing policy recommendations that were feasible for all member countries.

In your opinion, what positive changes have taken place in the last thirty years or so for women in fisheries?

I would underline and capitalize and make bold one word: ACCESS. The number one issue is access to resources. To be a fish processor or trader, you must have access to fish to process and sell. Culturally, there are some countries where women face certain restrictions, but we are also seeing changes. There are several women in Africa now who are very strong in the sector; they own their fishing vessels; some go to fish themselves. In terms of access to financial resources, we are seeing a massive transformation due to interventions on the ground. In Tanzania, there are support mechanisms in place like the village savings and credit schemes which help women get the seed money they need. There are also initiatives by the Ministry for example, through "the blue economy"; the Ministry is also making some efforts to facilitate capital to women's groups. In terms of access to information, we are seeing a huge transformation with the use of social media. Information is everywhere. Women are more confident right now. Earlier they would be shy but these days it is different. They're like: 'This is my job; this is what feeds me; this is what enables me to take care of my family. So why would I be shy? I am not relying on anybody else to give me food, to take my children to school, to have healthcare for my family!' But we need to have a mix. When we train women, we share with them strategies that may sometimes work and sometimes may not. For those strategies that work, we need to also support women with financing because if we train and leave, that does not help much.

Is the decision-making around fisheries changing for the better?

Currently, the government is making strides towards recognizing women, and, since the national platforms of women today are strong, the government is including women in various programs and processes. Giving an example from Tanzania, during the review of fisheries law in 2019, in the room where the review of the policy was being launched, I did not see any women processors. When I raised a question about this, they said that women were represented in the room as processors. But I could not see them so I asked then: who are these processers? It turned out that there were men in the room representing the fish processing factories. But you cannot equate women fish processors and traders with processing factory owners - it does not make sense! This is an example of the type of challenges that exist, Later, particularly after TAWFA was established, women began to be invited to participate in the other consultative meetings. After the national network came into being, things became totally different. The

network is involved in every aspect of decision making. I see this as a good beginning although we still have a long way to go in terms of real actions on the ground.

Could you describe how and why women are moving away from traditional processing to modern processing facilities?

Moving away from traditional processing facilities to modern processing facilities is a process that involves many factors. Some time back, representatives of women fish processors and traders went on learning missions to Ghana where they learnt about modern facilities. However, implementation is still a challenge due to many reasons including the lack of capital. For example, we have an island called Goziba in the middle of Lake Victoria in the northwestern part of Tanzania and it is huge in terms of fishing activity, mostly silverfish. Judith, a member of the governing body of TAWFA at the national level, is trying hard to mobilize the local women there. There are only three men who own fish drying racks that they rent out. For the women (and other men), if they want to dry their fish, they have to pay for the service. The only other alternative is to spread the fish on the sand. This is what most women are forced to do but it impacts their business because the dried fish is poorer in quality and cannot fetch a very good price. Also, drying fish in the beach is much harder particularly during the rainy season. This is situation in landing sites along the lake as well. However, there are instances in some other landing sites where a few women own the fish drying racks, and it is a huge advantage to them. Other women do wish to build their own drying racks. That transformation is happening but slowly. The chairperson of TAWFA has some land where she has built some drying racks and is currently training other women.

Are there policies or legislation in any African country for post-harvest fisheries alone?

I may not be informed enough but in most countries that I know of, the fisheries policy takes on board everything. Earlier aquaculture was included within fisheries but now fisheries and aquaculture policy in many cases are separate. I believe aquaculture is a different domain that should have its own policy.

Have any African countries adopted gendersensitive budgeting and schemes exclusively for women who work in post-harvest fisheries?

Having a gender-sensitive fisheries budget is a dream that's yet to come true. I think more efforts need to be put towards gender-disaggregated data and analysis, because when things are non-disaggregated and blanketed together, many things are forgotten, and then, during implementation, other areas are prioritized; not post-harvest, not support for women.





Members of Executive Committee of Tanzania Women Fishworkers Association (TAWFA) Lake Zone Chapter. Having a gender-sensitive fisheries budget is a dream that's yet to come true

Are African governments supportive of women's associations, platforms, cooperatives and community networks?

Women's platforms are receiving a lot of support, especially with the AWFishNet. Most of the national chapters work closely with the line ministries responsible for fisheries in their countries, and even when they were launched, the ministries were supportive. Sometimes the support is limited due to limited budgeting. I understand that for Malawi, Tanzania and Namibia - countries where a national plan of action is being developed - women are being represented within national task teams, so that's really significant.

Are strong institutional frameworks and mechanisms in place to support gender mainstreaming?

I believe a number of African countries have gender mainstreaming policies, but not exclusively for fisheries. The Ministry responsible for Fisheries has to make an extra effort to include gender mainstreaming. In Tanzania, there is a gender desk in the Ministry and a gender mainstreaming strategy is in place. It is the implementation part that needs to be operationalized.

What kind of training programmes do women's organizations working at the national level and especially among the youth, require?

The training programs that they would require are number one, leadership. Once you

have good leadership, things move easily. For example, AWFishNet members are national organizations, also referred to as chapters. Every chapter has a board which is formed by representation of women from different parts of that country and that board is diverse because it includes the youth. It is important for the leadership to be trained on leadership skills which involves issues like representation, feedback mechanisms, reporting, financial management training, resource mobilization training, and so on, because establishing a national platform is one thing but making it operational is another. To do so requires several processes, including strategic planning, activity prioritization and resource mobilization.

As far as the youth is concerned, they need trainings on current technologies to simplify their work: on the use of social media for better communication; on networking; and most importantly, on online business skills. They need to be trained on improving the quality of their products and packaging. Consumers these days are more aware and quite careful about the choices they make. And so, processers must present their products in ways that would attract the consumer and build consumer confidence.

INDIA

Engendering social capital

Vagaira groups, a type of family support mechanism, facilitate 'successful' internal migration amongst fishers on the East Coast of India

By **Nitya Rao** (N.Rao@uea. ac.uk), Professor, Gender and Development, School of Global Development, University of East Anglia, Norwich, UK, and **J. D Sophia** (sophia_john@ rediffmail.com), Independent Researcher, Chennai, India

arine fisheries in India is a castebased occupation, with a social and political hierarchy in place. For those belonging to the subordinate fishing castes, excluded from decision-making processes at home, migration is an important strategy for gaining economic resources, social power and recognition as skilled and successful marine fishermen. In this pilot study, we explore the processes and mechanisms underlying the internal migration of fishers in coastal Tamil Nadu, India, and the pathways to 'success' both in terms of social mobility and material wellbeing. We interviewed 65 migrants, both men and women, who have moved from Rajakuppam, their village in Tamil Nadu's Cuddalore district, to Kasimedu in the state's capital - Chennai.

Male migration in the locality is rising, mainly as a pathway to accumulate capital for investment in mechanized fisheries. Women often lose access to fish as a result and are obliged to abandon their occupation. While they lose incomes and their contributions are invisibilised, women continue to play important roles in the social reproduction of the fishing enterprise, largely unacknowledged. In seeking to better understand gender relations in the context of rising migration amongst fisher households, we report here on the importance of marriage ties and kinship relations, brokered by senior women, on the outcomes of migration.

A range of factors from coastal erosion and natural hazards to the lack of infrastructure and poor marketing facilities in their village, have made the local fishermen look for opportunities elsewhere. They found fishers in Chennai using advanced craft, gear and engines, but importantly, earning remunerative prices for their catch. This made Chennai an attractive destination. The first migrants from Rajakuppam, however, confronted a host of institutional barriers and everyday conflicts. The Chennai fishers were



Hard to land at the eroded beach. A range of factors from coastal erosion and natural hazards to the lack of infrastructure and poor marketing facilities in their village, have made the local fishermen look for opportunities elsewhere



At the break of dawn, fisherwomen at the harbour. The Chennai fishers didn't allow the migrants to register their boats, or join the fisher association, made them pay penalties for fishing in their waters, and engaged in several small forms of everyday harassment

Pattinavars, while those from Rajakuppam belonged to the numerically smaller and hierarchically subordinate Parvatharajakulam caste group. The Chennai fishers didn't allow the migrants to register their boats, or join the fisher association, made them pay penalties for fishing in their waters, and engaged in several small forms of everyday harassment.

Despite these daily tensions and conflicts, the Rajakuppam settlers gradually built political connections that enabled them to receive federation boats and all government schemes and entitlements alongside local fishers. With this eligibility they formed their own association and enrolled as members in Fishermen Cooperative Societies. Alongside this, they focused on strengthening their social capital, as trust and social support were critical for overcoming the resistance they faced and achieving positive outcomes. As their children grew up, and their daughters married, they formalized a family support group known as 'vagaira'- literally a collective of members tied together through kinship and marriage, as a form of bonding social capital. Though six vagaira groups have been formed with about 65 migrant households, we focus here on the Annamalai Vagaira, constituted by the first migrants to Chennai, to better understand its organization and contribution to their success.

The Annamalai Vagaira is an informal family collective, constituted over a period of time, bringing together generations for a common goal. A senior woman, Muniammal, 65, wife of one of the first migrants, was central to this social organisation, negotiating with different members of the family their respective roles, contributions and entitlements. While initiated by her and her husband, the next layer of the vagaira included her seven children, both sons and daughters, and their families. Once her children were well-settled and self-sufficient, the group was further expanded. Brothers of both her sons-in-law and daughters-in-law constituted the third layer. Over time, other relatives such as her sister's son joined the group. This vagaira group now has 13 families owning 26 boats (see Figure 1). While two of her sons are not actively engaged in fishing, her daughters' families all now own boats and are dependent on fisheries for their livelihood.

The *vagaira* provides its new members financial support for investing in boats and gear. When two of Muniammal's second son-in-law's brothers came to Chennai, her daughter mobilised money from her siblings for them to start the fishing business. Gradually after stabilizing their business, they repaid the amount to her daughter. But it is more than money; the group continues to provide emergency cash and capital, technical Women's social reproduction roles are often ignored in studies of gender relations and divisions of work in the fisheries sector knowledge, marketing support to fetch better prices and reduce losses, and conflict resolution to start and expand their business. Transparency in sharing information about their fishing assets like crafts, gear and other equipment, creates a team spirit, rather than one of competition. Rapport and trust within the *vagaira* is strong. It is this commitment to supporting each other through the exchange of goods, money and ideas that is perhaps one of the most important factors driving the success of the Rajakuppam fishers in Kasimedu.

While being a member of the *vagaira* group, each family maintains a clear division between the domestic and productive spheres. Women take family-level decisions relating to matters such as education, health, and savings, but those relating to the purchase of boats, nets, other equipment, fixing traders and auctioneers for selling their fish, are taken collectively. With practical experience, new members learn to make informed decisions, while the *vagaira*'s collective social capital allows for the sharing of risk, the monitoring of emergent threats and opportunities and the provisioning of moral and material support during times of crisis.

The key elements that keep the group together are the strong relationships between siblings and kin, financial give-and-take, knowledge and asset sharing, collective decisionmaking and the exchange of suggestions/ advisories. Despite these positive features, conflicts do arise, mostly related to finances and the number of boats owned. Jealousies arise among women if their monetary expectations are not met. It is usually the older women like Muniammal, who talk to the conflicting parties and help arrive at an amicable resolution. As KV, the eldest son of Muniammal, noted, "my mother is an accomplisher, and she now plays the role of an advisor to many. She helps maintain a smooth growth curve by facilitating the resolution of the small ups and downs among and between the families of our Vagaira". The other early migrants too established family groups and are doing well in Kasimedu. These groups give hope to the migrants from Rajakuppam and provide hand-holding support if they wish to establish themselves in the sector.

Fishers from many parts of Tamil Nadu migrate to Chennai for fishing, but in the absence of a support system, during times of crisis or conflict, they see no option but to return to their home villages. Rajakuppam fishers, belonging to a homogenous but marginalised caste group, confronted many challenges by supporting each other through their family groups. This strong family cohesion played a key role in making them 'successful' settlers in Kasimedu. KV continued: "We were the first to become boat owners in Chennai, and we then expanded our team by constituting a family group. None of the 44 fishing villages of Cuddalore has the system of Vagaira; it is we from Rajakuppam who created, demonstrated and sustained this model. Now amongst us, there are five to six vagaira groups, each owning a minimum of ten to maximum thirty boats".

Over the past four decades, the migrant settlers from Rajakuppam, now owning almost

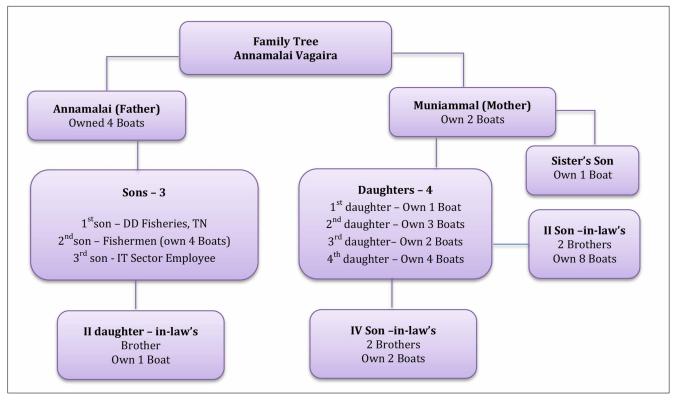


Figure 1: Annamalai Vagaira. The Annamalai Vagaira is an informal family collective, constituted over a period of time, bringing together generations for a common goal

one-tenth of the boats operating out of Chennai harbour, their children in higher education, have achieved both economic and social mobility. They belong to the upper classes amongst fisher families, with a high standard of living, and have broken caste barriers between themselves and the dominant *Pattinavars*. Theirs is a story not of exploitation, but of success, despite the many challenges they faced.

At the same time, their bonds with their family groups; fellow fishers and fishing labour have also become stronger. As Muniammal clarified, "wives of boat owners, especially senior women, have played a central role in building and maintaining social ties, both within the family and vis-à-vis the wider society". Women's social reproduction roles are often ignored in studies of gender relations and divisions of work in the fisheries sector. The experience of vagairas, explored in this paper, makes visible women's central roles in ensuring the success of migrant fishers' enterprise.

Note: This article is extracted from the research paper: Rao, N., Sophia, J.D. (2023). Identity, sociality and mobility: understanding internal fisher migration along India's east coast. Maritime Studies 22, 42 https://doi.org/10.1007/s40152-023-00333-1

he year was 1998. Lydia Sasu, the notable personality being profiled in this column, was then a civil servant in the Department of Women in Agriculture in the Ghanaian Ministry of Food and Agriculture and also the Coordinator of the Freedom from Hunger Campaign of the Food and Agriculture Organization of the United Nations (FAO). Using the authority and privilege at her command, Lydia worked relentlessly to highlight the need for holistic and sustainable solutions to tackle the all-pervasive problem of hunger in Ghana. By drawing attention to the problems of illiteracy, unemployment, poor health and the under-representation of marginalized groups, including women, Lydia made the all-important connections that allow the root causes of hunger to be identified and addressed.

PROFILE

Lydia Sasu – Hungry for a cause Twenty-four years ago, a women's advocate spoke up and the technocrats listened

By **Peter L. A** (pieroquz@gmail.com), Member, ICSF, Ghana



As a result, a campaign organization, the Development Action Association (DAA), was established in 1999, with Lydia as its Executive Director. Born and brought up in a farming household herself, Lydia's efforts through the DAA were focused on the anti-hunger campaign and the promotion of education and skills training for farming and fishing communities. Twenty-four years have elapsed since the DAA was formed, and its impact on its members and on communities mired in poverty have been profound. In 2002, Lydia was invited to attend the FAO World Food Summit, where she joined forces with farmer groups and other stakeholders to create a national farmer's platform in Ghana - the Farmers Organizations Network in Ghana (FONG). Subsequently, FONG became a member of ROPPA – a small-scale farmers network in West Africa.

Lydia Sasu met Chandrika Shama and Nalini Nayak of the International Collective in Support of Fishworkers (ICSF) at Tsokomey, Ghana in 2002. Through this meeting, for the first time in the sector, many hidden dimensions of human rights in smallscale fisheries were brought to light and the groundwork for an expanded focus on lobbying and advocacy in the sector was laid. Equally important were certain later collaborations with TESCOD and FAO on the Small-Scale Fisheries Guidelines.

With rural women at the forefront of her work, Lydia Sasu initiated World Rural Women's Day celebration in Ghana on 15 October this year with the intention of bringing rural women together to share best practices and lessons learned on food security and make their voices heard. Under her leadership, DAA is currently operating as one of the eight partners for the Sustainable Fisheries Management Programme (SFMP), jointly run by the United States Agency for International Development (USAID) and Ghana, which aims at rebuilding targeted marine fisheries stock in the country. Under the SFMP programme DAA was provided with an office complex and fish processing centre at Kokrobite in Ga South District of Accra where women fish processors are trained.

Lydia Sasu continues to play a key role in DAA as an advocate, skilled trainer and educator in both small-scale fishery and agriculture. She has been recognized with over a dozen national and international awards including the Women's Creativity in Rural Life by Women's World Summit Foundation in 2011, the Kleckner Trade & Technology Advancement Award as well as the Iowa USA at the World Food Prize in 2015; the FAO 40th anniversary award in Ghana in 2016; the USAID Ghana Women of Courage Award and the US Embassy of Ghana award for Woman of Courage in 2020. GENDER

The gendered economy of dried fish

Being conducted in six countries across South and Southeast Asia, the Dried Fish Matters project is a first-ever exploration of the gendered social economy of dried fish

By Derek Johnson (derek. Johnson@umanitoba. ca), Professor & Head Department of Anthropology, University of Manitoba, Canada, Nikita Gopal (nikiajith@gmail. com), Principal Scientist & Head, Extension, Information & Statistics Division. ICAR-Central Institute of Fisheries Technology, Kochi, India, Kyoko Kusakabe (kyokok@ ait.ac.th), Professor, Gender and Development Studies, Department of Development and Sustainability, Asian Institute of Technology, Thailand, Tara Nair (tara01@gmail.com), Director (Research) Work Fair and Free Foundation, Bengaluru, India, and Mirza Taslima Sultana (m.taslima@juniv.edu), Professor, Department of Anthropology, Jahangirnagar University, Dhaka, Bangladesh

ried Fish Matters: Mapping the Social Economy of Dried Fish in South and Southeast Asia for Enhanced Wellbeing and Nutrition, or DFM, is a Social Science and Humanities Research Council of Canada Partnership Grant project. The project spans a duration of eight years: 2018-2026, and involves research in six focus countries in South and Southeast Asia: Sri Lanka, India, Bangladesh, Myanmar, Thailand, and Cambodia. Since inception, the project has also sponsored smaller exploratory studies in Indonesia, the Philippines, and the African Great Lakes region. A large number of institutional partners, collaborators, and students from Asia and Canada are involved in the DFM project, which aims to develop the first comprehensive understanding of the importance of dried fish in South and Southeast Asia from social, economic, cultural, nutritional, policy, and other perspectives.

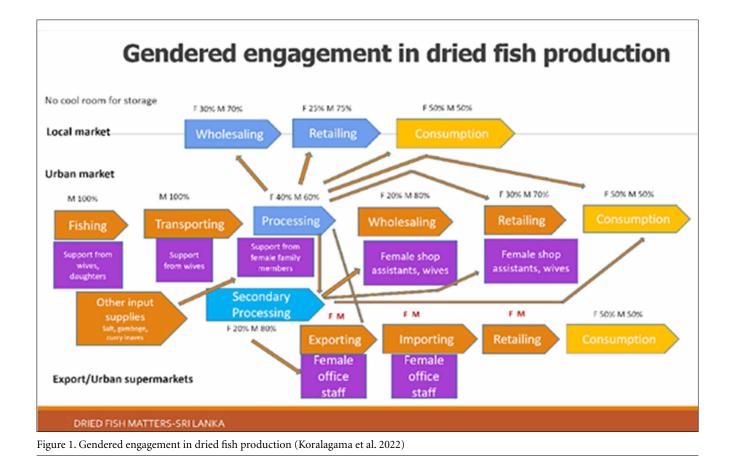
A central theme in the DFM project's conceptualization and research from the outset has been gender, with a concern not just to increase the recognition of women's crucial role in dried fish production and trade but also to develop analytical tools for describing and analyzing social economies of dried fish that integrate feminist theory and methods. The DFM project's research is led by thirteen research teams in the six countries, including eight in India, in coordination with focused research projects by post-doctoral fellows and undergraduate, master's, MPhil, and PhD students.

GAF-8, the 8th Global Conference on Gender in Aquaculture and Fisheries, held in Kochi in November 2022 (See Yemaya Issue 67 'GAF8: Shaping the future" for more details on GAF-8) provided an opportunity for the DFM project to showcase the gender dimension of DFM, and addressed two objectives: to share the research findings from the first phase of the project and to provide an opportunity for DFM participants to take stock of achievements and plan the remainder of the project. DFM's contributions to GAF8 were divided into three panels on regional lines: Sri Lanka and Bangladesh, India, and Southeast Asia. Papers were presented by lead researchers or students from each of the focus countries and from most of the DFM research teams.

The panels began with two conceptual introductions by Derek Johnson and Iroshani (Madu) Galappaththi regarding the place of feminist theory in DFM. Johnson indicated that social economy lies at the heart of DFM's focus on the production, distribution, and consumption of dried fish. Galappaththi argued for an integrative and relational perspective on gender linking feminist intersectionality, value chain analysis, and a social wellbeing approach. DFM views dried fish as a product that has meaning and value in the context of specific places and historical moments. Mapping the importance of dried fish is not therefore limited to dried fish's monetary value but must include other material, relational, and subjective values such as nutrition and taste.

By showing that women's work in fisheries is concentrated in processing and trade, a feminist perspective reinforces the shift in fisheries and aquaculture research towards productive work downstream from harvesting in fisheries value chains. A feminist perspective also broadens the scope of economic analysis to show how patriarchal ideology creates the conditions for undervaluing or rendering completely invisible women's productive and reproductive labour (the double or triple burden). Women have poorer access to and control over capital and other resources, and to spaces for marketing. Women's commonly unrecognized labour accounts for a significant part of the economic value of dried fish. Women's work thereby subsidizes economic value addition in dried fish production. Finally, understanding gendered work in the production of dried fish is further complicated by other intersectional dimensions of identity such as class and ethnicity.

The introductory presentations pointed to two suggestions for practice in feminist analysis. First, meaningful inclusion of women's perspectives on the production and consumption of dried fish will reveal a range of priorities and processes for intervention that are different than the technical and top-down interventions typical in the dried fish sector. Second, the reflexive orientation of feminist theory recommends that the internal and external relational dynamics of projects such as DFM themselves deserve thought, care, and attention.



The remaining presentations in the three DFM panels on gender and social economies of dried fish presented findings broadly within the space laid out at in the introductory presentation. Perhaps consistent with the early stage of analysis of findings, however, emphasis was primarily on description of gendered work and inequality in dried value chains rather than engaging with the more analytical and interpretive potential of feminist analysis. This is by no means a weakness of the research, as mapping the social economy of gendered work in making dried fish requires a baseline empirical understanding of men and women's contributions and conditions of work.

Presenters from Bangladesh, Sri Lanka, West Bengal, Gujarat, Kerala, and Cambodia gave details on the gender division of labour across the value chain. As a general pattern, men predominate in harvesting and largescale processing and trade. Women commonly predominate in family-based and smaller scale processing and small-scale trading. The gender division of labour is not uniform across all places, however. Dilanthi N. Koralagama, for example, showed how religious and ethnic differences in Sri Lanka shape the degree to which women are involved economically in dried fish related work. She provided a useful summary figure (see Fig. 1) that indicates the relative involvement of men and women in different value chain segments.

Tara Nair and colleagues for Gujarat and Md Mahfuzar Rahman for Bangladesh pointed out how workers and petty processors and traders in dried fish value chains are vulnerable to exploitation due to their relative lack of capabilities. Nair provided a fascinating illustration of the specificity of this vulnerability in her analysis of how local political elites engage in extortionary behaviours in a dried fish retail market. Within this shared context of vulnerability, many presenters emphasized the additional constraints that women workers face. Mostafa A. R. Hossain and colleagues, Md Mahfuzar Rahman, Raktima Ghosh and Jenia Mukherjee, Aparna Roy and colleagues, and Dilanthi N Koralagama showed that women are simply paid less than men for the same workday. In Sri Lanka, men are given long-term contracts while women are hired only as contingent day labourers. Presenters also pointed out how women's working conditions are relatively worse than those of men as they bear a greater burden due to the common lack of sanitary and toilet facilities, they are more subject to sexual harassment, and they are expected to manage domestic tasks in addition to their paid work.

Further research is needed to deepen understanding of the structure of gendered economic relations in dried fish value chains. Work is also needed to broaden the social economic and applied aspects of DFM's analysis. These latter areas were implied or briefly



GAF8 delegates. Since inception, the project has also sponsored smaller exploratory studies in Indonesia, the Philippines, and the African Great Lakes region

Women's commonly unrecognized labour accounts for a significant part of the economic value of dried fish mentioned in many of the presentations, but more time is needed for analysis and reflection on the findings before these issues can be fully addressed. Mirza Taslima Sultana and colleagues provided one promising analytical direction, following Judith Butler, in their theoretical reflections on how research participants in the dried fish sector in Bangladesh discursively reproduce existing gender norms.

One critical aspect of analysis that needs more attention is change. This theme was addressed in different ways by Uon Sokmoly, Wae Win Khaing, and Prasanna Surathkal and colleagues. For Cambodia, Uon Sokmoly discussed women's responses to declining supply of fish for the manufacture of the salted and fermented fish paste - prahok. Her analysis shows that responses vary greatly according to contextual factors, including identity and the economic status of a household. Wae Win Khaing in Myanmar and Prasanna Surathkal and colleagues in Karnataka both showed how shocks - a coup and Covid-19 - dramatically influenced women's ability to produce dried fish. Women's gender identity had an important role in affecting their ability to access raw materials and spaces for producing and marketing dried fish.

Mostafa A. R. Hossain and colleagues and Raktima Ghosh and Jenia Mukherjee addressed the applied implications of their findings. Mostafa A. R. Hossain and colleagues argued for a social protection approach to build women's capabilities and ensure their safety and sanitary needs in public spaces. Raktima Ghosh and Jenia Mukherjee recommended greater attention to process in engaging women in the respectful coproduction of knowledge about best practices in dried fish production.

These last two points about practice link well to the material and relational dimensions of women's work in the production of dried fish. Raktima Ghosh and Jenia Mukherjee called attention to the reflexive ethics of knowledge production problematized by researcher positionality, as advocated by feminist theory. By implication, their approach suggests that the dynamics of the DFM project itself become a subject for reflection. In combination with the descriptive and interpretive challenges of a feminist mapping of the social economy of dried fish described previously, these reflections on knowledge production point to the ways in which feminist approaches are inspiring and energizing the DFM project's research and analysis.

To find out more about DFM and the social economy of dried fish in South and Southeast Asia with respect to enhanced wellbeing and nutrition, please visit https://driedfishmatters.org/

GAF

LETTER TO EDITOR COMMENT ON YEMAYA NO. 67, AUGUST, 2023

By **Nalini Nayak** (nalini. nayak@gmail.com), Trustee, ICSF Trust The former issue of Yemaya published the full report of the Global Conference on Gender in Aquaculture and Fisheries (GAF), 2022. I was initially surprised to see this but then realised it was a special issue of Yemaya. The report is well written and gives a good picture of what is going on with women in aquaculture and fisheries world over, and, specifically, in India.

In 25 years, GAF has built a storehouse of knowledge, widening its outreach among fisheries institutions and researchers and this is indeed commendable.

I have also carefully read the recommendations, reflections and the proposition for the way forward. I am glad to see that the need for the better use of political economy insights still finds a place here. I recall Meryl Williams' inputs at the Bangkok Conference, where she gave an input on this too. Cornelie Quist and I had also given a presentation on this from our work experience in ICSF. Yes, I think it is easier said than done but there is always the need to remind ourselves that all these developments take place in a political context, drawing workers, particularly women, into an economy that certainly has an impact on the environment and life and livelihoods on a broader level.

I think we have to begin to reflect on the use of the term and concept of 'mainstreaming gender'. This term appears several times in the deliberations. Mainstreaming in a patriarchal system is actually 'male-streaming'. Is this what we want? The need to dis-aggregate data is now widely accepted and happily also the concept of intersectionality is now more accepted. Bringing these dimensions into our research certainly enriches it, but does it feminise it? Does our research feminise our practice?

All the papers continue to speak of the increased burden of work that women do and the rather poor returns because of the discrepancy of wages, women's loss of tenure rights, their poor health conditions and limits of child care. These are all areas highlighted in the SSF Guidelin es on which little is done to engage governments in their commitments. While there is an increasing awareness of the rights-based approach, the awareness/ acceptance of women as fishworkers is still not a reality. In several countries, and in India too, they are considered in the realm of allied workers. Fishers, as a whole, are not considered by themselves or the state as workers in the way the self-employed (such as small and medium farmers) are. They are not covered by labour law. This is an area that needs further probing. Developing synergy between departments - fisheries, forestry, revenue, labour, health, education - also requires consideration.

Initially, most of the fora that focussed on gender issues were related to the women's movements in the country. Hence there was a dynamic relation between activism and academia, each nourishing the other. But increasingly, the fora have begun to get more academic, detaching themselves from the movements. While some of this is understandable, it does not build robust gendered knowledge in the long run. Where does the academic work feed into? Does academic work, even if applied in the field, remain experimental/anecdotal? Scientific experiments are conducted in controlled conditions and therefore could have adverse effects when practised in uncontrolled conditions. If there is a need to upscale, it can be done only through wider intervention. When this is done without proper ground preparation and constant monitoring, the adverse effects on women are negative as all the papers show - poor wages and poor working conditions. If one delves into the health impact on women, I guess the impact will be found to be far more devastating. This takes time but this is the kind of involvement that is required to actually evolve a praxis and integration of gender in fisheries.

This is just my thinking out loud, knowing that we still have miles to go. \mathbb{M}



DECEMBER 2023

YEMAYA RECOMMENDS

BOOK

Women and men in small-scale fisheries and aquaculture in Asia Barriers, constraints and opportunities towards equality and secure livelihoods; 186 pages; 2022; Food and Agriculture Organization of the United Nations (FAO); Bangkok, Thailand. https://doi.org/10.4060/cb9527en

By **Veena N**

(Veena.N.PhD@gmail. com), Researcher, based in Bengaluru, India

> Food and Aprical Organization of United Mattern

A sia accounts for the highest labour force participation in the small-scale fisheries and aquaculture across all regions of the world. While, historically, the role of women in this context has been all but invisible, in the last decade or so, notable efforts are being made to raise awareness on women's contribution to, and promote gender equality within, fisheries and aquaculture supply chains. The book under review is an important step forward in this direction.

The study reviews the gender-related literature on small-scale fisheries and aquaculture published in the decade 2011 to 2021, and consolidates the recommendations offered in the reviewed literature. Specifically, it seeks to inquire into the forms and implications of gender-based division of labour, analyse the drivers of these differences, and identify entry points and opportunities for addressing inequalities and discriminatory practices.

In most people's minds, there is a direct association between oceans, fish, and fishermen, which leaves women completely out of the picture. Studies however show that women are active in many aspects of fisheries and aquaculture industry, including pre- and post-fishing activities as

well as shore-based fishing activities such as gleaning, such as repairing nets, sale of fish, fish processing, drying and fermentation of fisheries catch, and so on. However, women's invisibility in the fisheries and aquaculture value chains, perpetuated by the lack of gender-disaggregated data, means that there are few initiatives to support women. Further, men tend to dominate high-value species while women are typically relegated to low paying jobs in the informal sector which increases their vulnerability to economic, social, health and environmental shocks. In the community and family, women are burdened with the bulk of the care work for families, including elderly, children and sick or disabled relatives, while men tend to be considered as only income-generators.

These gender differences translate to inequalities in terms of access to assets, resources and entitlements across education, information, knowledge, finance, infrastructure as well as social capital, creating a self-perpetuating vicious cycle of disadvantage for women. Women end up bearing a heavier burden of invisible and unacknowledged work with lower access to resources, and consequently, their well-being levels are seriously compromised, with the heaviest burdens borne by female-headed households and women in situations of domestic violence.

The study identifies several entry points for addressing gender inequalities in fisheries and aquaculture. These include the collection of gender-disaggregated data; comprehensive research on gender in aquaculture; gender analysis of fisheries and aquaculture industries, businesses, communities, families and fisheries associations; awareness-raising on women's roles and capacities to strengthen their entitlements among policy makers, associations, communities and families; encouraging equitable sharing of household labour; increasing women's participation in developing technologies and projects suitable for women; organizing women's groups to increase women's visibility; mainstreaming gender in fisheries budgets and policy; addressing gender-based violence and the specific needs of female-headed households and women left behind.

This book is a welcome addition to literature in the post-COVID publication slump and the recommendations of the authors are both important and actionable. These recommendations will not only strengthen women's position, but also lead to a stronger and more stable fisheries and aquaculture industries. Such decadal reviews of research are also useful in terms of setting new directions and agendas in research.



PUBLISHED BY the International Collective in Support of Fishworkers Trust 22 First Floor, Venkatrathinam Nagar, Adyar, Chennai 600 020, India Tel: (91) 44 2445 1216 Fax: (91) 44 2445 0216 E-mail: icst@icsf.net Website: www.icsf.net EDITED BY Nilanjana Biswas Illustration by

Deepak Sivan DESIGNED BY M.S. Vasanth Christopher Writers and potential contributors to *YEMAYA*, please note that write-ups should be brief, about 2000 words. They could deal with issues that are of direct relevance to women and men of fishing communities. They could also focus on recent research or on meetings and workshops that have raised gender issues in fisheries. Also welcome are life stories of women and men of fishing communities working towards a sustainable fishery or for a recognition of their work within the fishery. Please also include a one-line biographical note on the writer. Please do send us comments and suggestions to make the newslett

suggestions to make the newsletter more relevant. We look forward to hearing from you and to receiving regular write-ups for the newsletter.