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PENCOO GEJ
Collaborative Management of Sustainable Fisheries in Senegal

**An Evaluation of the Roles of Women in Fishing
Communities of Dakar, the Petite Cote, and Sine
Saloum.**



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Cover Photo: Focus group meeting of women in the artisanal fishing sub-sector

Credit Photo: Madeleine

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GLOSSARY

Banabana—Long-distance traders
Cymbium—shellfish (exported)
Fataya—fried stuffed dumplings
Les Secheries—area where fish are processed
Mutuals—savings banks
Naat—savings groups using tontine model

ABBREVIATIONS AND ACRONYMS

BASICS—Basic Support for Institutionalizing Child Survival Project, technical assistance partner for newborn and child health to the USAID Bureau for Global Health.

CPLA—Conseils Locaux De Peche Artisanale, local organizations based on location and gear/specialty, formed in response to the Law of the Sea and the FAO's emphasis on traditional communities participation.

FENAGIE— National Federation of Fishing Industry Economic Interest Groups

NGO—Non-governmental organizations, usually international that provide funds for development projects.

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EXECUTIVE SUMMARY

The women of the fishing communities of Senegal are central to the processing and trade of product landed by the country's artisanal fleet, roles that have been critical to the fishing industry for many decades. Furthermore, the majority of women's earnings are devoted to providing for their children, as well as contributing to their husband's work. Nevertheless, until recently, women's contributions to their families, communities and the fishing industry as a whole, have not been acknowledged. Consequently, women have been underrepresented in fisheries management and/or discussions of ways to improve the sustainability of the fishing industry.

The practical necessities of providing for their children, with little or no help from their husbands, interferes with women's ability to save or reinvest in their business. Lack of access to credit is a major constraint on both traders and processors. The traditional savings groups (*naat*) are insufficient to finance business expenses. Even where there are banks (mutuals), high interest rates, paperwork and/or the delay in obtaining funds often hampers their effectiveness. The need for funding is most acute when fish is scarce and prices higher.

Basic infrastructure needs for processors, including access to clean water, basins to ferment fish, tables to dry fish and ovens to smoke fish, shade, as well as lights for night work, storage facilities to prevent theft, and schools or childcare centers are in constant demand. Even in the cases where International NGOs have provided infrastructure facilities, these are all too frequently too small, inappropriately designed, or worse, started and left incomplete. At least a quarter of the communities visited had processing facilities that are unsatisfactory and at least two are unusable, resulting in crowding and very poor conditions.

Basic infrastructure for traders is less complicated: access to fresh water, ice, shade, basins or counters to display the fish, transportation and cold storage. Nevertheless, traders are rarely provided with help from NGOs, or even local government. In addition, they face strong competition from men, including subsidized traders from other West African countries.

Other infrastructure desperately needed by the small sector of women who fish, that is, collect shellfish, includes gloves, water shoes, safety equipment such as life vests, and pirogues to reach the mangroves.

Many of the women recognize the characteristics and value of good leadership. Attributes include communication skills, knowledge (e.g., literacy), confidence, willingness to attend meetings and report to women at the group level. Typically, the processors are better organized than the traders.

Workshops to teach literacy, accounting, proper handling of seafood, marketing, etc. are appreciated by the women and well attended when available. Product diversification and

training in repurposing waste was also mentioned as potential workshop topics. A longer-term commitment to providing such skills and helping women retain them would clearly be beneficial. This could take the form of extension services, modeled on the U.S.'s Sea Grant Program. Such work could lead to empowerment and capacity building among the women in the fishing communities.

A variety of research, outreach and educational activities are recommended.

1. INTRODUCTION

Visits to twelve fishing communities in two weeks in September 2011 offered the opportunity to compare and contrast the conditions facing Senegalese women of Dakar, *La Petite Côte and Sine Saloum* who trade and process fish. In each of the villages or towns, the Fisheries Service agent organized a meeting with the leaders of the women's associations.¹ The numbers of attendees varied from about 10 to 40 women representing the nested organizations of traders, petty traders and processors.

While such a rapid appraisal could only touch superficially on the most obvious needs and hopes of the women, this summary will provide a depiction of the common characteristics of the communities, their similar critical needs, and the potential for foreign aid to, if not transform, at least to nudge change in a positive direction.

Some of the most significant results of the September research, combined with results and photographs from fieldwork conducted in 1981, were presented at a Gender Workshop in March 2012 to invited female leaders of Senegal's fishing communities. This report reflects comments made by the women during the presentation. Observations made during a swift, impromptu visit to Saint-Louis, the site of the 1981 fieldwork, has also informed this report.

The main body of the report summarizes the major issues/needs identified by the women and includes recommendations for follow-up research and action. Appendices B-O provide more detailed summaries of conditions and topics discussed at the individual field sites, basically in the order in which they were raised, though without noting the frequency of mention at each site. Appendix P are notes based on a visit to Saint-Louis in March 2012. Because this research was not conducted as a formal survey, there are topics that were not mentioned at some of the meetings. We relied on the participants to tell us what was most important to them, though we did direct some questions. Time was also a factor, that is, some of the meetings went longer than others and some of the women seemed to be more engaged by the process than others.

2. REPORT

2.1. Background

2.1.2 Fisheries

Like women in other parts of West Africa (Udong, et al. 2009), wives of Senegalese fishermen were traditionally the traders and processors of the sea's

¹ Aminata Mbengue served as translator. COMFISH partner World Wildlife Fund arranged for payment to the attendees of 2000 CFA to compensate for the women's travel expenses and/or time.

bounty landed by their husbands and sons. Several decades of fishing by foreign distant water fleets, some with permission from the Senegalese government in exchange for foreign currency and some without, along with an expansion of the artisanal fleet, led to changes in species availability. In a classic pattern of supply and demand, as the preferred species became scarcer, they also became more expensive. Increasingly, women's trade and processing of fish changed from a preponderance of such species as grouper (*thiof*) and *capitaine* to the smaller, less expensive, and more plentiful *sardinella*.² At the same time, the accoutrements of modern life increasingly became available and desired, drawing more women into processing and trading.

2.1.3 Families

Senegal is a polygamous society; predominantly Muslim, and men have the right to have up to four wives. Clerics and religious belief encourage large families. Since 1999, Senegalese health services partnering with USAID and other health organizations have made a concerted effort to educate the population about such topics as nutrition, HIV and the avoidance of preventable mortality among infants and children. As part of the BASICs program,³ health workers have also emphasized the benefits of spacing out births. As one woman noted, it used to be that you would see a pregnant woman with a baby on her back and a toddler at her side trying to sell a small basin of fish. Now many of the women take seriously the guidance that promotes three years between births. Not all men, however, are supportive of this movement.

Women generally take responsibility for their family's food, health care, education (e.g., supplies), and daily clothes, in addition to expenses related to their occupation. In some communities, the women also pay for such consumer goods as a refrigerator, television, bed, and telephone as well as electricity. Men are normatively expected to pay for the house, electricity, children's clothes for celebrations, sheep for religious holidays and some other food, as well as fishing expenses. Commonly, however, the women noted that their husbands do not have a lot of money, so they "have to help them." This was confirmed at the Gender Workshop in March 2012 when female attendees said they pay for "yip" (everything). This received further confirmation in Saint-Louis where some of the

² "According to government figures, catches of white grouper fell from 60,000t in 1971 to 7,000t in 1999 with a study completed in 2007 reporting the species is in danger of extinction in Senegalese waters.

Meanwhile, catches of coastal demersal species fell from more than 140,000t in 1997 to about 84,000t in 2002 with the share of low value species in the catch growing significantly. Other species in decline include conch of which production fell from 20,000t in 1989 to 5,000t in 1998 due to depleted stocks." (<http://www.worldfishing.net/features101/new-horizons/senegal>). In March 2012, however, reports of increased catches, especially in Saint Louis, suggest that there is at least some improvement.

³ <http://www.msh.org/global-presence/sub-saharan-africa/senegal.cfm>

women of Goxambaye⁴ noted that many of the housing compounds were paid for by women.

The practical necessities of providing for their children with little or no help from their husbands, interferes with women's ability to save or reinvest in their business. At least one interviewee noted that even if men's incomes are increased, this extra does not necessarily benefit the women in their households. Workshop attendees agreed that men tend to save their money so they can take another wife.⁵ One attendee advised the others to limit their needs, not to purchase consumer goods to impress their neighbors. However, it is important to note that there is a downturn in the availability and a sharp increase in price of fish in some seasons (severely true for some communities). During these periods, the lack of credit is particularly harsh as there is rarely alternative employment.

2.1.4 Foreign aid

NGOs have funneled foreign resources to Senegal for many decades. Shockingly, all too many of the elaborate and expensive projects were misplaced or misguided. All together too many were begun with high hopes but left incomplete and deteriorating, removing access to valuable land. Nevertheless, a few successful projects suggest that appropriately designed and collaborative efforts could provide a tremendous boon to Senegalese fishing communities.

2.1.5 Technology

Cell phones are now essential for women's businesses. Old and young alike use the phones to communicate with fishermen, traders and processors. For example, the women who want fresh fish for processing or selling will call someone who is at the beach to find out what fish has been landed and/or traders will call women to tell them how much/type of fish they want to buy. This is a great time saver and, in the cases in which women must pay transportation costs, this eliminates unnecessary trip costs.

One leader noted that she is thinking of setting up a website for her organization, but she wasn't sure what the benefit would be.

⁴ Guet Ndar was the original fishing community of Saint-Louis on the Langue de Barbarie. Goxambaye is the neighborhood that extends to the north of Guet Ndar and Ndar Tout is the neighborhood to the south.

⁵ Asked why, the women at the Gender workshop said that they do it for "love" of their husband and because of prestige (they want their husband to have status in the community for the sake of themselves and their children).

2.2 Critical business needs

2.2.1 Organization

If success truly does demand collaboration, it is perhaps obvious that communities seeking help must demonstrate the capacity to work together as a group. Senegal has no shortage of organizations; in fact, the alphabet soup of fishing-related agencies and organizations is daunting for an outsider to contemplate. What is important to know, however, is that the women's organizations are nested. Umbrella organizations with acknowledged leaders are found at the national and town level. Within these are smaller groups, often comprised of neighbors, who share an occupation or commodity specialty and who select their own leaders. The hierarchical arrangement of the nested organizations affects members, so the larger organization's leaders' views are often more influential than others.

The women who work as processors tend to be better organized than the women who are traders, whether long-distance traders (*banabana*) or petty traders. Traditionally, the processors had a location, commonly referred to in French as *Les Secheries*, where they would cut, ferment, salt and dry the fish. Although the women worked independently, they would occasionally help each other by, for example, turning each other's fish while it dried. Some also shared their technical knowledge, passing on traditional techniques to newcomers, including to young relatives and to those who came from other areas of Senegal. This limited cooperation may have helped develop their capacity to work as a group. Also, because their product can be successfully stored, they are neither as dependent on immediate sales nor as vulnerable as are the fresh fish traders, thereby making cooperation with others easier. Furthermore, since the buyers of their product tend to purchase the output of more than one processor at a time, the competition among the processors tends to be less acute than the competition among traders.

The petty traders have worked for very small-scale incomes for decades. In the past, they have also been the focus of efforts to remove the middlemen, based on a theory that the fishermen would then have a higher income that would benefit his family, an idea specifically contradicted by the women.

The critical importance of the women's incomes for families and households is rarely acknowledged but was emphatically confirmed during the Gender Workshop. One suggestion that arose at the workshop was to institute an identification card for the various sectors, thereby making it easier to quantify and acknowledge women's participation. That, however, would require a group decision about the criteria for obtaining a card, for example, ways to determine if the potential cardholder is trustworthy.

2.2.2 Education

The formal educational level of the women in the fisheries sector is fairly low; however, from time to time the women's associations, NGOs and the Senegalese government offer professional training workshops that selected women attend to learn business-related skills as well as literacy in French, Wolof, and/or Serer. At the Gender Workshop, women noted that extension agents who would regularly spend time in communities would be helpful. They commented that it is difficult to retain the knowledge presented in the workshops and could use help doing so.

2.2.3 Leadership among women

Leadership among the women is not based on educational level. The female leaders of organizations are typically chosen democratically. In a few cases, new groups of young women have been formed and these women have recruited an older woman they respected to be their leader. Nevertheless, at the Gender Workshop, women commented that education in French or the Koran is essential, "to be able to speak with confidence."

In the meetings held for this project, the women who were acknowledged as leaders were usually the individuals who spoke initially on behalf of the group. Some would then ask their members to also respond to the questions posed. In one case, the leader yielded the floor immediately to her members, than spoke herself, summarizing the major issues and needs of her community.

Asked about participation in male-dominated organizations (e.g., CPLA), most of the women leaders who have attended such meetings claimed that they participated fully and were not constrained by the uneven numbers.⁶ However, several mentioned that more women should be involved/invited, even when the topic is focused on fishing, since their occupations depend on what transpires in fishing. This view was confirmed at the Gender Workshop. In addition, the suggestion of a congress for women active in fisheries and CPLA met with approval.⁷

All of the meetings scheduled for this research were arranged in large part by the men who are the Fisheries Service representatives in each port. At most of the meetings, the men sat at a table with the women facing. (In Mbour, where more men attended, only one sat at the table, the others were on chairs set on the side,

⁶ CPLA=Conseils Locaux De Peche Artisanale, local organizations based on location and gear/specialty, formed in response to the Law of the Sea and the FAO's emphasis on traditional communities participation.

⁷ Participation in the CPLA and other organizations can be financially difficult for women who have to provide for their family through their work. A stipend would be welcomed.

perpendicular to the group of women.) The invitees were primarily the female leaders of traders' and processor' groups who invited other members as well.

Interestingly, in Joal and Foudiougne, during the meetings with women, one or two men who either sat in on the meeting, or passed by and commented, expressed annoyance that the women were being consulted without men's input. In Mbour, a rousing conversation between the few men present and the women suggested mixed reactions by both genders to the points being made by the other.

At the Gender workshop, women confirmed the important role of female leaders. They pointed out that they need competent leaders who are motivated, strong, kind, unselfish, and who regularly attend meetings and vote. These leaders need communication skills so they can talk to officials, but also so they are able to disseminate information to the women at the community/group level. If the women in the community do not know that one of the women is a representative to the CPLA, and don't hear about what transpires at CPLA meetings, for example, what is the point of that woman's participation?

At the workshop, women suggested that outreach focused on the importance and necessity of leadership roles at the community level would be helpful. Some commented that jealousy might interfere with women's leadership. "As you are climbing, others try to pull you down, so you have to be determined to succeed."

2.2.4 Finance: savings and credit

Some of the groups developed out of savings groups formed by neighbors and peers that could be considered a precursor to today's popular micro-credit institutions. Known as *naat* in Wolof, the literature on tontines describes the way small amounts of money from each member of the group are gathered daily, weekly or monthly and periodically loaned to one member of the group. The member repays the loaned amount within a specified time period. In the past, these funds served as savings for celebrations. Today, with some exceptions, they are more commonly used for women's businesses. In some cases, the simple rotational savings structure is adapted to include an added agreed upon amount that serves as interest.⁸

Despite the ubiquitous savings groups, a need for greater sums of money for both individuals and for their organizations was the constraint most frequently noted by both women traders and processors. Many of the towns and villages do have more formal financial institutions such as international banks and/or "mutuals," that is, mutual savings banks. These often do not meet the needs of the fishing communities because of high interest rates, complicated paperwork, and long

⁸ Mamadou Baro, University of Arizona, in his presentation, "The Women's Savings Revolution in Mali" at the Society for Applied Anthropology Annual Meeting in March 2012, described a similar system as an "innovative approach" to microfinance reaching 400,000 women in Mali.

waits for funds. More than a few women noted that obtaining funds, even with a line of credit already arranged, could take months. Nonetheless, there are some communities in which the “Mutual” does provide needed credit in a timely fashion.

Small-scale (petty) traders and processors both lament that a lack of sufficient funds handicaps their competitive edge in the purchase of fresh fish. For the processor, this may mean that the freshest fish is unavailable, so they work with less fresh fish, possibly leading to higher rates of insect infestation and therefore, post harvest loss, as well as lower profit levels.

For the petty traders, the lack of funds means that they are unable to purchase the fish most highly valued by the domestic market and/or the fish that can be exported. The influx of male foreign traders from Burkina Faso and Togo, for example, reportedly subsidized by their own country and consequently able to pay higher prices, has increasingly constrained the women traders at all levels. Senegalese men, too have greater access to credit and may also out-compete the women.

As more women have financial success, inheritance (customary law) that bars women from inheriting directly and only a portion of what men inherit, and taxes that demand a higher rate than men with the same income, may need to be addressed through both educational outreach and parliamentary procedures (USAID 2010). It was explained that the original rationale for the difference was an expectation that a husband might take any inheritance his wife receives. A brother, however, would always provide for the needs and protection of his sister.

At the Gender Workshop, the problems associated with lack of financing were confirmed. Some of the women emphasized to the others, the critical importance of borrowing only for productive activities (i.e., not for celebrations) and of repaying loans on time so that they are not forced to borrow from the “man on the street” at a higher interest rate. Further, they agreed that a woman’s bank might be an appropriate solution. In September, while conducting research, the majority of the financial institutions visited noted that the women do have a better record of repayment than the men.

2.2.4.1 Effect on organizations’ goals/activities

The lack of funds at the individual level affects organizations as well. In a few cases, women’s groups have successfully paired with NGOs to develop schools and processing centers. In Yoff and Bargny, for example, they have managed the construction of grammar schools and in Niodior, they managed the construction and operation of a successful processing facility for syrup made from local fruits. In all three of these cases, the women’s organizations have strong leaders with the capacity to encourage the members of their organizations to contribute the

matching funds required by the NGOs, to oversee construction and assure that the materials and labor were paid for, and in the case of the processing center, to take workshops to learn the skills and requisites for developing a clean and healthy product.

In other cases, the women's organizations have not been included in the funding, planning and/or implementation of development projects to the detriment of these projects' success. Ironically, a prominent example is a project for the processors of Yoff, the same organization that successfully collaborated in the construction of a school. For this second project that is attempting to build a spacious processing center, an international NGO did not deal directly with the women's organization, but instead used a local NGO to handle the funds and construction. In September, the project was at a standstill and though required to be completed in a little over two weeks, appeared to be at best one-third completed. By March, however, the first phase of the project was completed, though many of the originally planned facilities, such as modern smoking ovens, were not included in this phase.

2.2.4.2 Effect on trading arrangements

Although perhaps less frequently than in the past, women traders do finance fishing trips by paying for fuel, gear, and/or boats. At one time, this financial contribution was linked to the right of the woman financier to buy the fisherman's catch, paralleling similar arrangements among the Fanti fishtraders in Ghana (Walker, 2002; Thampi 2003; Hall-Arber 1988). Unlike the Fanti, however, the Wolof women who did (or do) purchase vessels usually put them in the name of their husband or sons. This practice cloaks the involvement in and contribution of women traders to the practice of fishing and reinforces patriarchal rights in fishing communities.

With the increasing popularity of the purse seine, used with larger vessels and more fishermen, the fishermen's landings generally became too large (i.e., too expensive) for a single female trader, especially petty trader, to buy directly. Even when traders form a group to buy a boat's catch, competition with foreign traders usually prices them out of the opportunity to handle a boat's whole catch.

In the past, the women could pay for part of the catch immediately and the remainder once the catch was sold, but few fishermen are willing to agree to such terms now. In contrast, in Rufisque, we were told that the male traders (banabana) may finance equipment, fuel, etc. and then are able to buy the whole catch at a discount.

At the Gender Workshop, some explained that occasionally, women loan some money to crewmembers for pirogues, fuel or equipment. The fishermen then gives

the loaned money to the captain, but often the captain leaves after landing leaving the *pirogue* owner to sell the catch. He may sell to whomever happens to be the last person to loan them money (not necessarily the woman who has given the most), so the women lose money.

Some women said that they no longer finance fishermen, whether they are relatives or not, because they were not given priority in the purchase of the catch and their loans were sometimes left unpaid. Even if a woman's husband was the leader of the fishermen on a particular boat and she loaned him the money for fuel, she would have to compete with other traders to buy the fish.

2.2.4.3 *Fishermen's point of view*

Fishermen noted that while they might prefer to sell to their wife, the fishing trip is often a joint venture with other fishermen who own some of the gear or pay for some of the expenses, so it is easier to sell to a trader who can buy the whole catch for cash. The choice to land in another community/larger trading center such as Mbour is said to be due to the availability of infrastructure. (Some women suggest that this is also a way for fishermen to avoid the demands of relatives who believe they should be able to receive an "advantage" by virtue of being related.)

Comparable to the share system of crew payment in the Northeast United States, the proceeds from a catch are typically divided into thirds after expenses are paid. In some cases, one-third is for the net, two-thirds for the fishermen; in other cases, one-third is for materials, one-third for fishermen and one-third for the owner.

2.2.5 Benefit of improving access to credit

Improving women's access to credit and monetary access would help them to expand their business activities, improve product quality, and would likely result in greater productivity thus benefiting households, communities and ultimately, the nation. Because of the variability in the availability of fish, the need for access to credit is greatest during those times when fish is scarce and the prices for wholesale purchase is highest.

A renewed emphasis on accounting/numeracy skills, including a thorough introduction to interest rates, and other business development and management lessons would be helpful. Follow-up is critical however to help women maintain their new skills. Female extension agents would be one way to address this need.

2.2.6 Infrastructure

In order to produce a clean and valued product, the processors need basic equipment. At a bare minimum, they need basins for fermenting the fish, tables for laying the fish out to dry, and ovens for smoking. Access to clean water,

toilets, shade, and a ground cover that can be cleaned are high on the list of desired infrastructure. Eventually, for exportable quality, the women will need to keep the animals from foraging around the drying product.

Whereas a number of NGOs have built tables, basins, smoking ovens, and shades, few of these are designed properly for the women's work. In one community, the tables had cement slabs as "legs" that blocked air circulation, a necessity for drying. The plastic tabletops, while theoretically easier to clean, crack under the strain of intense sun and cold rain (in season), and equally frustratingly, slow the water absorption. The white plastic is often black with mold. Cement or tiled square basins for fermenting are hard to drain and clean. The smoking ovens in Cayar were built too high. Modern fuel was requested by one group/individual.

Although the women appreciate the help of the NGOs, they point out that when they are consulted and are able to participate in the design of the project as well as the implementation (e.g., hiring construction workers), the result is generally much more satisfactory.

Women who have taken workshops on the production of a wholesome product are also aware that gloves, hairnets and lab coats are desirable. The need for packaging and labeling is increasingly being discussed by those who want to raise the value of their product. Several noted that on occasion intermediaries buy their product, package and label it, and sell it for a higher profit.

Traders need access to pans, ice and cold storage. Several also pointed out that they need a place with shade, a location to sell.

Transportation is frequently mentioned as a need by both processors and traders. Truck ownership is seen a potential solution. In Rufisque, the Fisheries Service representative suggested that the community needs two trucks, one for the processors and one for the traders. In some communities, better-maintained roads are a critical need. This is particularly true in such places as Djifere where a significant portion of the road is unpaved, rutted and, in the rainy season, flooded.

Both fresh and processed product quality is weakened by the lack of access to sufficient potable water, ice and cold storage. The "cold chain" has been an issue of concern for over 30 years, but the desire to export to Europe has made the absence particularly exasperating for the women and men who trade and process fish.

2.2.7 Diversification

Both traders and processors explained that they would like to diversify their remunerative activities. While some communities do sell, for example, the fish waste to be transformed and used in agricultural production, they recognize that they could make additional profit if they could transform the products themselves

for the agricultural market. Fishmeal and powdered shells, the transformation of waste to fuel, are a few of the products the women would like to learn how to make and market. Food items, couscous, peanut brittle, *fataya* (fried dumpling) are already made by some, as are a variety of items intended for the tourism market. Soap making is being discussed by some of the young women.

One community is making an effort to retain their youth by opening retail businesses that help diversify the available occupations. The profit from the businesses will be partially used to finance a savings and loan association that will provide loans to fishing businesses.

Marketing is another key constraint. If the quality challenges are resolved, the women would need help with marketing (advertising, product packaging, etc.) whatever products they produce, whether from the fisheries or not.

2.2.8 Recognition of traders by NGOs

The traders are rarely offered NGO help. Few have been invited to participate in workshops to learn business (accounting, financial planning) or fish handling skills. This may stem in part from the longstanding prejudice against middlemen, but it may also derive from a lack of understanding about how important their incomes are to their families and households and sometimes to fishing itself. As Bennett (2004:451) observed about women in all aspects of the fishing industry, “Despite the important role played by women in the fishing sector, the social space they occupy has often remained invisible to researchers and policy makers.” As noted above, the other limiting factor is that the traders are not often well-organized. It is easier for an NGO and the government to work with organized groups, rather than individuals.

2.3 Education

Muslim children attend religious school to learn the Koran and to read Arabic. At six, they start public (taught in French) school and go until the first exam at the end of six years. Frequently, children will fail this exam and drop out of school to go fishing (male) or help with household tasks (females). Fishing is attractive to young men due to the appeal of making an income, rather than being a recipient of parents’ limited funds.

For communities that do not have a middle school or high school, the children sometimes go to live where the schools are located. This can create financial and social problems for the student and the family. USAID’s 2010 Gender Assessment Report proposed construction of girls’ dormitories as one way to help young women continue past grammar school. In fact, dormitories for both genders are needed.

The women suggested that a vocational school or workshops for young people would be a good way to promote diversification of occupations.

Workshops for adults have taught literacy in French, Wolof and Serer in addition to a variety of skills associated with their business. Accounting, quality and hygiene, new/different product preparations are a few of the topics taught. Several mentioned the need for additional workshops. One leader pointed out that things are always changing and workshops are a useful way to help figure out how to adapt. As noted above, follow-up is needed so that the skills learned can be practiced and retained.

2.4 Health of workers and products

Clean water, toilets, and gloves are rare. The detritus from fish handling and life is often tossed into the water beside the beach or into a river flowing into the coastal waters, or buried on the beach. Even where there are some sewers, such as in Dakar, the outfall is sometimes right next to a beach where the boats are landed, where fresh fish is cut up (sometimes using seawater), and where children swim. For the processors who smoke fish, the constant exposure to smoke is harmful. In Bargny, where a school stands right beside the smoking fields, the women are very concerned about the health of their children.

Senegal's community health programs seem to be effective. Most women said that they visited clinics for prenatal check-ups and awareness of the benefits of spacing birth seemed high. It was less clear that women were able and willing to convince their husbands of these benefits if there was a disagreement. Some women did mention the need for childcare and more accessible health centers.

The short time frame and the context of "meetings" for this research did not permit exploration of some of the more sensitive issues raised in the USAID 2010 Gender Assessment Report. For example, female circumcision, domestic violence, and HIV/AIDS were not discussed. Nor did anyone mention the lack of sanitary facilities and water in schools as a constraint on female attendance after puberty.

2.5 Marine Resources

FishBase lists 656 species of marine fish native to Senegal. Among the most common landed by the artisanal fleet today are the sardinellas. Sardinellas caught in the Northwest African zone are composed of two species, the round sardinella (*Sardinella aurita*) and the flat sardinella (*Sardinella maderensis*). The purse seiners target the round sardinella whereas the encircling gill nets mainly catch the flat sardinella (FAO 2001). Other marine fish include cods, hakes and haddocks; flounders, halibuts and soles, jacks, mullets and sauries; redfishes, basses and congers; tunas, bonitos and billfishes. Sharks and rays are also landed, processed

and exported. Shellfish including various bivalves, crustaceans such as spiny lobster and shrimp, as well as cuttlefish are landed.

2.5.1 Processed Products

Salting, fermenting, drying and smoking are the primary forms of processing of fish and shellfish products in Senegal. Some of the products (e.g., shark and the shellfish known as cymbium) are prepared strictly for export. Some of the products are highly valued for the domestic market (guedj) and others are commonplace but appreciated products valued for both flavor and protein (e.g., kethiak (roasted, salted and dried *Ethmalosa* or *Sardinella*), tambadiang and yauss (whole dried *Ethmalosa*)). Shrimp is sought domestically and internationally.

2.5.1.1 Minced fish

An FAO research project found that medium income groups had imaginative uses for minced fish made from sardinella, such as “fish balls for attractive presentations of meals and salad, wrapped boiled eggs or stuffed eggs as entree or main dish.” “However the expansion of fish mincing and marketing requires that critical weaknesses be effectively addressed. These include a design of a safer and more durable mincing equipment, a use of a manual backbone remover, an adoption of a production flow complying with good handling and good processing practices, a supply of basic facilities (potable water, regular removal of solid waste and drainage of waste water, toilets) at the processing and market places, and a refrigerated display to prevent losses if readily minced fillets are to be sold.” (Diei-Ouadi 2005).

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 Summary

Traders, especially small-scale traders, rarely receive funds or training. Traders could be key to reducing overfishing/fishing for juveniles. Since they are the first to buy the fish, they provide the market incentive for these fish to be caught. A concerted effort would need to be made to explain how fisheries management would ultimately benefit their family’s food security and provide a sustainable livelihood. Furthermore, a program for offering alternative income options would be essential for the short term while stocks are rebuilding.

The women who attended the meetings were clearly interested in learning. Training workshops were noted as helpful, but the lack of finances to implement their new skills or understanding is a source of frustration. This was often expressed in terms of needing to improve the quality of their product so that it would be acceptable for export. Needed is an increased awareness of improved

quality benefitting domestic marketing as well, such as decreasing post-harvest losses (which means more money is made for each fish landed, benefitting all in the chain).

3.2 Communities

Cayar has regularly been the recipient of funds from NGOs. While there is still work to be done, more radical change might result from selecting one of the sites less frequently helped. Cayar, however, is well-organized with strong women and any aid given is likely to help the group move on. Cayar has also been involved in fish conservation efforts, so with COMFISHs diverse project goals, it is appropriate to continue working there.

Yoff also has one very well-organized group of processors that has succeeded in negotiating marketing contracts to send their product abroad. They are one of the only groups to pack their product in a container for transport. They have also obtained major funding from at least one NGO. In September, when the research for this report was conducted, the funding, that had not been handled directly by the women's organization, had apparently run out with their building only partially completed. In March, at the Gender Workshop, the leader of the processors reported that the facility had ultimately been completed.

Rufisque's Fisheries Service representative has a vision for helping both the women who are traders and those who are processors organize in order to generate funds so they can "help themselves." Among the ideas being discussed is the purchase of two trucks, one for the women traders and one for the processors. The women are organized and at the meeting easily listed their many needs.

Several of the communities have virtually no processing infrastructure and little or no access to credit, yet there are few alternative occupations, even for those who have received their high school diploma. The women of Ngaparou suffer from a lack of access to local fish, in addition to a lack of infrastructure. Their fishermen now make more money by landing at Mbour, but say they are interested in developing their own community. In contrast, Popenguine noted that they have access to quantities of fish, but without cold storage cannot preserve it; so have to buy smaller, more expensive quantities.

Joal's traders need help organizing and their processing sector has a half completed center that should not be left to rot when the need is so great. Similar, though at a smaller scale, is the unfinished facility at Nianing.

Both Mbour's and Point Sarene's needs seem more tractable, partly because they seem to have strong organizations for both the traders and processors. Mbour's processors are disadvantaged, however, since they were forced to move to the outskirts of Mbour, increasing their transport costs. Both communities have

benefited from at least some portion of their traders/processors developing products for export.

Djifere processing suffers from a lack of organization, poor transportation routes, and dilapidated infrastructure. Several of the women processors, however, were clearly bright and articulate. Some help with organizing and movement towards ways to improve financing and marketing could help.

Niodior is a shining example of well-organized, skilled entrepreneurs developing a new product and joining as a community to improve their surroundings. While the product is not fisheries-related, many of the people involved are engaged in shrimp/fish processing as well. It seems likely that a modest investment from outside could be leveraged to benefit the fishing-related businesses. The women who have successfully worked together on the forestry products could serve as mentors for the fish/shrimp processors.

In Foudiougne both the men and women's organizations have opened shops to provide extra income that will eventually compensate for losses of income due to the shrimp closure by providing a savings and loan fund. The organization of each is similar, but the incomes of the individuals working in the shops are notably different. This discrepancy supports "UNDP estimates that employed women typically earn less than half of men's wages." Nevertheless, both the men and women are proud of their achievements so far. They demonstrate the capacity of the women to organize, work cooperatively towards a goal and achieve initial steps in diversification of occupations, while encouraging their youth to stay.

COMFISH partner FENAGIE was the most frequently mentioned organization noted for teaching women how to improve the quality of their products. Follow-up, however, with funds for implementing this knowledge is absent.

3.3. Recommendations—Research And Outreach For The Future

Research in September and the Gender Workshop in March raised a number of questions or issues that should be considered in the near future to better understand the role of women in the fisheries in order to move forward. The recommendations are not rank ordered. Some of the important action items are highlighted.

3.3.1 Help from NGOs

ACTION: Investigate incomplete facilities that were begun with NGO financing. Were the women consulted about their needs and the design of the project? Was the failure to complete the project due to the inability or unwillingness of the women to contribute matching funds? Did the NGO fail to consider the full cost

of the project? Were the women willing to pay user fees? Was the scale of the project too small? Lessons could be learned from projects in Cayar, Yoff, and Nianing that have/had involvement of sponsors from Japan, Spain and Belgium.

3.3.2 Education

Encourage increased education for women on practical skills for their businesses, including numeracy and product handling. Include traders in the opportunity to participate. Other topics: French, technology, leadership training (including emphasis on why organizing and leaders can benefit everyone), conservation. Provide outreach help to both girls and boys in the fishing communities to help them stay in school longer.

3.3.2.1 Extension Service

At the Gender Workshop, women noted that extension agents would be helpful. They commented that it is difficult to retain the knowledge and could use help doing so.

FENAGIE works with women in training workshops, but not on an on-going long-term, daily or weekly basis. Why are there no female representatives of the Fisheries Service?

ACTION: Establish a network of extension agents who could help women and communities increase or maintain—

- Business knowledge, numeracy
- Literacy
- Health and sanitation (network with existing health services)
- Training in transforming waste to useful (saleable) products

3.3.3 Organization

- Need better evaluation of the leaders
 - Several leaders have a vision and show a willingness to take responsibility
 - Revealed by leading the conversation at the meetings
 - As designated leaders, they are in an organizational position to exercise their responsibility
 - Do they also have the will and ability to “take charge”?
 - Does or would collaborative leadership work?
 - Could women be taught to appreciate and encourage leadership?
- Need better evaluation of the organizations
 - Is it the leadership or something else about the organization that makes some more obviously successful than others?

ACTION: Encourage CPLA to revise their organizational structure in order to include more women (and empower them). The first step of this process was taken by developing the declaration that was ratified and signed by the women attending the March Gender Workshop.

ACTION: Help traders develop leaders.

3.3.4 Finances

Households: Who pays for what, specifically? Clarify the reality versus the norms. Explore the consequences of illness or loss of life of an adult in a household.

Business/banking: Why are some of the “mutuals” more effective than others? What determines the different interest rates? (Do they make sure their borrowers understand what the interest rate is?)

ACTION: Set up a Women’s Bank that provides faster access to credit

3.3.5 Marketing

Need to analyze the organization of marketing, look for ways to improve, possibly including product handling, as well as packaging and labeling.
Need to identify and quantify the value of women’s work in fisheries and communicate this. That is, what contribution does women’s work in fisheries make to the nation’s economy? Include traders (petty and larger-scale) as well as processors. Explore who would benefit from fixed prices for certain products (and who would not).

3.3.6 Women’s Contributions to the Industry

Determine to what extent women buy fishing gear, motors and vessels. Learn whether these are in their own name or the name of their husband. Evaluate the economic contributions of women’s roles in processing and trading to the industry, the communities, and the nation.

ACTION: Make women’s contributions to the industry visible.

3.3.7 Technology

How many involved in fishing industry have Internet access? Would computer training for women be of interest/valuable? Would web sites incorporating information about best practices in fish processing, sanitation, etc. be accessible to women? Also, who listens to the WWF community radio program and does it incorporate useful information for the fishing industry? What about television?

3.3.8 Ecology

The Burkina Faso traders prefer to purchase juvenile *sardinella* because the preference is for less salt and less oil to be used in the processing. This is due to both consumers' taste preferences and because the smaller fish dry more thoroughly and therefore are easier to transport. We were told that if catch of juvenile *sardinella* is harmful to the sustainability of the fishery, the traders needed to be stopped. (The implication is that as long as there is a market for the juveniles, the fishermen will catch them.)

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