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GENDER

A N D

FISHERIES

From the Editor

NEWSLETTER

ICSF'S

The need to recognize and incorporate women's traditional knowledge, to build capacity among women and to include the gender dimension in all aspects of planning and implementation for conservation and sustainable use of biodiversity were some of the key points raised by the Women's Caucus at the recently-concluded Eleventh meeting of the Conference of Parties to the Convention on Biological Diversity (COP11), held in October 2012, in Hyderabad, India.

The Convention on Biological Diversity (CBD), which evolved out of the historic Rio Summit of 1992, was established to address the worrying decline in biodiversity across the planet. This legally-binding treaty sought to promote the conservation, sustainable use and equitable sharing of benefits from biodiversity, in keeping with the overall objectives of sustainable development.

However, the last 20 years have only seen alarming declines of biodiversity. World leaders have been accused of failing to deliver on commitments made in 2002 to reduce the global rate of biodiversity loss by 2010. During COP10 in Nagoya, Japan in 2010, world leaders agreed on a new set of targets—the Aichi Targets—for the period 2010-2020. The need to reverse loss of coastal and marine biodiversity figures prominently in these new targets.

It is well known that the loss of marine and coastal biodiversity due to unregulated commercialization of the coast, persistent chemical pollution, climate change, ocean acidification, overfishing by industrial fleets and a host of other threats impacts most adversely the small-scale artisanal fishing communities by eroding the basis of their life and livelihood. Neoliberal models of economic growth pursued by country after country today have succeeded in greatly accelerating the destruction of the natural resource base.

For women, the loss of resources, traditional lands and occupations dramatically increases the working hours spent on domestic and wage labour even as economic and social entitlements are cut back further. The problem is compounded by gender-blind fisheries management policies, which, together with existing patriarchal practices, often increase the disadvantages that women face in terms of rights and access to resources or introduce new handicaps in women's lives.

In the face of increasing vulnerabilities, women in small-scale fishing communities continue to bear the primary responsibility of meeting the food security needs of their families. Food security and livelihood sustenance are deeply linked to biodiversity. Significantly, the women of fishing and coastal communities, as a result of the work they have done for generations, are equipped with vital traditional knowledge and technical expertise on how natural resources may be sustainably managed for the use of present and future generations. It is a matter of concern, therefore, that biodiversity policies continue to be framed without heed either to the vast storehouse of vital information on marine and coastal biodiversity that women in small-scale fishing communities possess, or in fact to the conditions of their lives and daily work.

The commitment to gender equality enshrined in the preamble of the CBD must not remain a mere token but be fully realized in every aspect of the planning, decision-making and implementation of the Convention. Unless gender is firmly brought on board, achieving the goals of the Convention may continue to elude us. **Y**



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Paying for *yip*

The earnings of women fish processors and traders in Senegal are the mainstay of their families but they facing systemic constraints

By Madeleine Hall-Arber (arber@mit.edu), PhD of the Massachusetts Institute of Technology, Sea Grant College Program, US

omen of the fishing communities of Senegal are central to the processing and trade of fish and fish products landed by the country's artisanal fleet. Their roles 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 to their husband's contributing 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 in the discussions on ways to improve the sustainability of the fishing industry.

As a graduate student in anthropology, I spent most of 1981 in Guet N'dar, the fishing community of Saint Louis investigating Senegalese women's roles in the fishing industry. My dissertation focused on the critical importance of the women's small-scale earnings. Fast forward 30 years on, when serendipity led to my inclusion as a consultant on a University of Rhode Island (URI)-United States Agency for International Development (USAID) project titled Collaborative Management for a Sustainable

well as to evaluate ways to strengthen their involvement in decisionmaking, and increase their benefits. Later, I presented my findings at a national gender workshop and contributed ideas for developing strategies for COMFISH and other projects to empower women in fisheries.

Like women in other parts of West Africa wives of Senegalese fishermen were

Fisheries Future (COMFISH). My responsibility

was to investigate the role of women in fishing

communities and fisheries organizations, as

Africa, wives of Senegalese fishermen were traditionally the traders and processors of the sea's 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 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 thiof (grouper) and capitaine (crocker) to the smaller, less expensive, and more plentiful sardinella (clupeids). At the same time, the increasing needs of modern life resulted in families requiring more cash income, drawing more women into processing and trading, thus increasing the competition in these already financially precarious occupations.

NGOs have funnelled foreign resources to Senegal for many decades. Unfortunately, all too many of the elaborate and expensive projects were misplaced or misguided. Nevertheless, a few successful projects suggest that appropriately designed and collaborative efforts could provide a tremendous boon to Senegalese fishing communities.

Visits to 12 fishing communities in two weeks offered the opportunity to study the conditions facing the 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. The numbers who attended varied from about 10 to 40 women representing the nested organizations of traders, petty traders and processors. While such a rapid

BRIAN O'RIORDAN / ICSF



The women who work as processors tend to be better organized than the women who are traders, whether *banabana* (long-distance traders) or petty traders

assessment over two weeks could only superficially touch on women's roles, discussions at the gender workshop in March confirmed many of my observations. In this article, I focus on the significance of women's earnings for their families and businesses, and how financial constraints affect further development, including those envisaged in projects sponsored by international development agencies.

Senegal is a predominantly Muslim, polygamous society with religious beliefs that encourage large families. Women generally take responsibility for their family's food, healthcare, education and daily clothes, in addition to expenses related to their occupation. In some communities, the women also pay for consumer goods such as a refrigerator, television, bed and telephone.

Men are 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 point received further confirmation in Saint-Louis where some of the women of Goxambaye 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 woman I spoke to noted that even if men's incomes increase, this extra does not necessarily benefit the women in managing their households. Workshop attendees agreed that men tend to save their money so they can take another wife. Furthermore, it is important to note that there is a downturn in the availability, and a sharp increase in the price of fish in some seasons, affecting some communities particularly severely. During these periods, the lack of credit is very harsh as there is rarely alternative employment. At these times, women have to use their meagre savings to provide for the family.

The women's organizations I met were nested groups—umbrella organizations with acknowledged leaders at the national and town level within which there are smaller groups, often comprising neighbours who share an occupation or commodity expertise and who select their own leaders. This hierarchical arrangement affects the group in that the larger organization's leaders' views are often more influential than those of others.

Leaders of organizations are typically chosen democratically, without specific regard to their formal educational level. In a few cases, new groups of young women have been formed and they have recruited an older woman they respect to be their leader. Nevertheless, women commented education in French and/or the Koran is essential "to be able to speak with confidence." other words, these leaders need communication skills so they can talk to officials. Women noted that leaders must also be able to disseminate information at the community or group level.

Having to provide for their children with little or no help, interferes with women's ability to save or reinvest in their business.

What's New, webby? In the company of the company o

Community-based Marine and Coastal Resource Management (http://community.icsf.net/)

raditional fishing communities have, through years of long interaction with fisheries resources, learned to manage such resources in sustainable ways, enabling them to survive over generations. There are numerous examples from around the world about how communities have managed their resources, resolved conflicts over resources, and shared their benefits, often through the mediation of traditional or customary institutions. Small-scale fishing communities have evolved mechanisms to ensure that the resources, livelihood opportunities and

revenues from the common property fisheries are spread as widely as possible within the whole community.

The ICSF website brings together bibliographic information from different parts of the world, including from peer-reviewed journals, case studies, reports and other literature on community-based marine and coastal resource management, and on co-management. It also provides information on the legal frameworks relevant for community-based resource management and other resources from ICSF publications. M

The women who work as processors tend to be better organized than the women who are traders, whether banabana (long-distance traders) 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 over fish while it dried. Some also shared their technical knowledge, passing on traditional techniques to newcomers, such as young relatives and those who came from other areas of Senegal. This limited co-operation 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 co-operation with others easier. Further, since buyers tend to purchase the products 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 incomes for decades. In the past, they have also been the focus of efforts to remove middlemen, based on the belief that the fishermen would enjoy higher incomes if middlemen were eliminated. The financial



ajashree Bahnji, Chairperson of the Marol Bazaar Koli Mahila Mase Vikreta Sanstha (MBKMMVS), the Koli Women Fish Vendors' Association of Marol Bazaar, was born into a large fishing family in Versova, Mumbai, in the State of Maharashtra, India. "Twenty years ago, fishing was a profitable business," she says, "but because it required labour, I had to drop out of school after Class Four to help my family." Rajashree's class teacher,

dirty," she recalls, "garbage everywhere and no place for women to sit. And in the rainy season, our sufferings multiplied!" Then, one rainy day, an event took place that changed the course of Rajashree's life: "I was in the market with my fish in the relentless rain, and before my eyes, my fish—our hard-earned wealth—was getting washed away. Tears fell from my eyes. I looked around me and found that every woman's plight was the same."

Rajashree decided it was time something was done. She took up the issue with the local women's groups. A long correspondence with the municipal corporation began. Soon Rajashree realized that some people from her own community were the biggest obstacle to change. But help was also at hand. "With the support of a local journalist, Mr Patil, we registered our organization, the MBKMMVS, which slowly forced the municipal corporation to act."

Regulations were introduced to mediate the selling activities of the women and the wholesale traders. An indoor area was created for women to sit in, although, according to Rajashree, they prefer to sell their fish outdoors in the sun. The drunks who used to gather at the market were turned out. Toilets were opened by the corporation and maintained by the MBKMMVS for a nominal fee. Lighting is provided by a local shopkeeper for a monthly fee of Rs10,000 (US\$180). The women's request for a canteen space is, however, pending with the authorities.

Rajashree's life has been full of challenges. Yet, under her leadership, the women fish vendors of Versova are today truly a force to reckon with! **M**

Rajashree Bahnji

Under her leadership, the women fish vendors of Versova are today truly a force to reckon with!

By **Shuddhawati S Peke** (shuddhawati@gmail. com), Researcher, ICSF

convinced of her high ability, came home to plead with her parents to let her continue studying—but the decision had been taken.

"We would wake up at 3 a.m. in the morning," says Rajashree. "Then a hired lorry would take us to Bhendi Bazaar where we would sell fish until one in the afternoon; come home for lunch and back again to sell fish in the evening bazaar." Rajashree was married off when she was about 16 or 17. Her husband was also in fisheries. His family was large and shared a common house. It was a challenge to learn to live with so many people. Says Rajashree: "Running a household is no less than running a country."

Together with her sisters-in-law, Rajashree sold the fish that the family boat harvested in Mumbai's Marol Bazaar. "The place was very

vulnerability of their occupations restricted their abilities to organize into groups.

Some of the indigenous financial organizations developed out of savings groups formed by neighbours and peers that could be considered a precursor to today's popular microcredit institutions. Known as naat in Wolof, the literature on tontines (mutual credit societies) 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. Despite the ubiquitous savings groups, a need for greater sums of money for both individuals for their organizations was the constraint most frequently noted by both women traders and processors. Many of the towns and villages have more formal financial institutions such as international banks and/or mutual savings banks. These often do not meet the needs of the fishing communities because of high interest rates, complicated paperwork and long waits for funds. Many 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 or petty traders and processors both lament the lack of sufficient funds that 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, enabling them to outcompete the women.

As more women have financial success, customary laws that determine inheritance bar women from inheriting directly, allowing them only a portion of what men inherit. It was explained that the original rationale for the difference in inheritance laws was an expectation that a husband might take away the inheritance his wife receives and not allow her to use it as she wills, while a brother, in contrast, would always provide for the needs and protection of his sister. Moreover, since women do not receive the same tax allowances as men do even when they are the sole breadwinner, unless a husband relinquishes his status as head of household, the tax law effectively requires women to pay higher taxes than men on a similar income.

The lack of funds at the individual level affects organizations as well. In a few cases, women's groups successfully paired with NGOs to develop schools and processing centres. For example, they managed the construction of grammar schools and the construction and operation of a successful processing facility for syrup made from local fruits. In 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 labour were paid for, and, in the case of the processing centre, to take workshops to learn the requisite skills for developing a clean and healthy product. In other cases, women's organizations have not been included in the funding, planning and/ or implementation of development projects, to the detriment of the success of these projects. Although the women appreciate the help of 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, for example, in hiring construction workers, the result is generally much more satisfactory.

The women I met with are very interested in learning. Workshops on literacy, accounting, proper handling of seafood, marketing and so on are well attended. Product diversification and training in reprocessing waste were 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, modelled on the US Sea Grant Program. Such work could lead to empowerment and capacity building among the women in the fishing communities.

While women appreciate help, they point out that when they are consulted and can participate in the design and implementation of the project, the result is much more satisfactory.

Tsunami, war and difficult recovery

This report on the struggle of fishing communities of Batticaloa, Sri Lanka, to recover from both civil war and the tsunami of 2004, is based on the author's visit there and meetings with local women leaders in June 2012

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Batticaloa, a district on the east coast of Sri Lanka, has been badly affected by both the ethnic-based civil war in Sri Lanka and the Indian Ocean tsunami of December 2004. The district is now one of the poorest regions of Sri Lanka. Fisheries and agriculture are the most important livelihood activities of the district. I visited the area last June and had a meeting with women leaders of local fisher communities, who revealed to me their situation and hopes.

Batticaloa and Amparai were the districts worst affected by the 2004 tsunami. Many people, in particular women and children, lost their lives. A total of 9,517 fisher families lost their assets and livelihoods for several months. Subsequent to the tsunami, when NGOs and government authorities supplied fishing families with gear and other assets, there were several discrepancies in the distribution. As a result, the fisher families were weakened in their co-operative and collaborative efforts rather than empowered for sustainability and development. Many fisher families also had been relocated far from their original villages

and workplaces, which meant a big change to their way of life.

Three years after the tsunami, a large-scale war erupted in the east of Sri Lanka and was most severe in Batticaloa. This again disrupted the local society. Due to a ban on sea fishing and restrictions in several fishing areas on the time and type of gear local fishermen could use for fishing, and due to destruction of infrastructure, the fisher families once again lost most of their ability for income generation.

Normalcy returned in 2009 but new forms of conflict in fishing escalated as illegal fishing increased in the traditional fishing areas of local fishing communities. A new body of fisheries societies at the district level was formed under the Ministry of Fisheries and Aquatic Resources. This replaced the existing District Federation of Fisheries Co-operative Societies (FCS) that was functioning to bring out the issues of fishermen and resolve them with the authorities at district and regional levels. However, this new body is not active or efficient in bringing solutions to the issues of local fishers, because it is controlled by the ministry, based on a top-down approach. In this situation, a vast number of fishing resources are being destroyed or captured by wealthy and influential fishermen. Big fishermen (using multi-day boats) and traders from the ethnic majority community from other parts of the country arrived and established their stake in the fishing resources and the 70-mile-long shoreline of the district, depriving local fishing families of their opportunities for income generation. Largescale outside investors are taking over coastal and mangrove lands for the development of the tourism industry and prawn farms, which do not give local fishing families any longterm benefits.

A recent (2010) household income and expenditure survey revealed that 20 per cent of the population of Batticaloa district live below the poverty line. Most fishing families have borrowed money or mortgaged their assets, and got entrapped in a vicious cycle of exploitation. Communal feelings and hatred are on the rise among the local fishing communities, who generally belong to the Tamil ethnic minority and who feel treated as a lost community in an ethnic war.

The women revealed to me the hardships that women of fishing communities of





Women in the district of Batticaloa, Sri Lanka would like to see effective fisheries management with their active participation

Batticaloa face at present. Many households have lost their male breadwinners and have become female-headed. Besides having the burden of taking care of the family alone, women without husbands (widows, deserted or with missing husbands) suffer also from a low status in society. Violence against women, and child abuse have become frequent. Women also are not aware about their legal rights.

During the war, many girls from fishing communities were conscripted by the militants (the Liberation Tigers of Tamil Eelam). I was told that of the female ex-combatants arrested by the Sri Lankan army after the war, a large group (around 1,860) was from fishing communities. They now need to be 're-integrated'. However, most of them are traumatized, have little education, few skills and are in poor health. Many are also physically disabled. It appears that women-headed households bear the main burden of caring for these (injured) female ex-combatants and traumatized former child soldiers.

Though fisher and other families in Batticaloa have been displaced, dispossessed and dispirited by the long-running war and the 2004 tsunami, matrilocal traditions and support provided by matrilocal kinship networks seemed to have survived (Batticaloa has a matrilineal society). These female support networks seem to be of enormous value for emotional stability and feelings of security. However, women receive very little outside support and professional help. There are also practically no opportunities for them to set up small businesses or find other sources of employment to generate adequate income.

Women in Batticaloa used to be actively involved in fisheries, but this has changed, in particular, after the disruption caused by the 2004 tsunami and the war. The women in our meeting felt there was great potential for women to develop livelihood activities in fisheries, but that they lacked the necessary skills and resources. There are several NGOs that target women for microcredit projects. However, as the women revealed to me, these quite often resulted in an increased burden for the women, as they could not repay the loans. I was told that, in several cases, husbands had even left their wives because of the problems of repaying loans. The women told me that they felt a great need for Though families in Batticaloa have been displaced and dispirited by war and the 2004 tsunami, matrilocal traditions and support networks have survived and provide emotional stability.

Fisheries and the Right to Food



By Ramya Rajagopalan (icsf@icsf.net), Consultant, ICSF

The report of the United Nations Special Rapporteur on the right to food, Olivier De Schutter, presented recently to the 67th session of the UN General Assembly, is significant in that it is the first such report on fisheries in the context of food security.

The report assesses both the contribution of the fisheries sector to the realization of the right to adequate food and the challenges that the sector faces. It examines how the individuals most vulnerable to negative impacts can be supported to ensure the progressive realization of the right to food, noting that pursuing a human-rights approach is critical to achieving sustainable development in the fisheries sector. It makes recommendations that could guide current and future processes at the global level and the implementation of national-level policies that would support the realization of the right to food.

The report highlights that women comprise about half of the global fisheries workforce and that that they are typically concentrated in pre-harvest and post-harvest activities. It calls for steps to be taken to actively support the livelihoods of small-scale fishers and the access to fish protein of food-insecure communities. It recommends five measures to achieve this:

the creation of exclusive artisanal fishing zones for small-scale fishers and greater oversight of incursions by industrial fleets; support for small-scale fishers' co-operatives in order for them to rise up the value chain; the establishment of co-management schemes to manage fishing resources locally; the avoidance of large-scale development projects that adversely affect the livelihoods of small-scale fishers; and the inclusion of fisheries and small-scale fishers in national right-to-food strategies.

Recalling the commitments made in the Outcome Document of the UN Conference on Sustainable Development (Rio+20), the report calls for measures to support the role of women in the fisheries sector, for example, by ensuring access to credit for women and providing adequate facilities for them at landing sites. In the report, the UN Special Rapporteur also welcomes the current initiative of the FAO Committee on Fisheries (COFI) to developing International Guidelines for Securing Sustainable Small-scale Fisheries.

The report can be accessed at: http://www.srfood.org/images/stories/pdf/otherdocuments/20121030_fish_execsummary. pdf f M

training on fish marketing, fish processing with upgraded technology, and financial and business management.

The women also felt very worried about the destructive impact of illegal fishing and gear conflicts, and felt the need to do something about it. They would like to see effective fisheries management with active participation of the local fishing communities.

Women of fishing communities, however, are not represented in the formal fisheries societies. The women leaders of fishing

communities, with whom I had the meeting, would very much like to see this changed to be able to take their interests and concerns forward to the fisheries authorities and other concerned officials. They also indicated being very interested to connect with women of traditional small-scale fishing communities in other parts of Sri Lanka to break their isolation and learn from new experiences, as also for the purpose of enhancing ethnic reconciliation and solidarity linkages.

ASIA

THE PHILIPPINES

For a better tomorrow

Case studies in Siquijor, The Philippines, demonstrate the benefits of women's participation in the management of marine protected areas

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Tomen in the Philippines are taking a stand against destructive and unsustainable fishing. On the small island of Siquijor, they have begun to play an important role in the management of a few community-based marine protected areas (MPAs). Aided by the technical support of their local government and the NGO Coastal Conservation and Education Foundation, some women have been empowered to manage marine sanctuaries to the benefit of the entire community.

MPAs are a key global tool of marine conservation, and stakeholder participation is a well-acknowledged critical component of their success. Although over 1,000 MPAs now exist in the Philippines, only 20 to 30 per cent of them are effectively managed. In their intent to create collaborative management of MPAs, NGOs and government agencies have historically focused on fishermen as the primary stakeholders.

Fishermen are sometimes already members of an established Fisherfolk Organization (FO), and when the process of creating an MPA begins, the FO is pulled in to jointly manage the MPA alongside the local government. Women who glean or collect shells and urchins have traditionally not been considered 'fishers' and, therefore, FOs are mostly or entirely male-dominated. As women have been systematically excluded from the opportunity to participate in MPA management, most management teams have few or no women involved. Instead, the FO and the local government put in the time and effort to manage the MPA but also receive the monetary benefits that come from divers' user fees.

Several case studies point to the positive role of women in MPA management; however, open-water MPAs are not covered by the literature. This article explores the role and effectiveness of women's participation in open-water MPA management in the Philippines.

There are two cases in Siquijor where the local women have taken the initiative to participate in MPAs. In one location, Maite, 28 women created their own registered association. Pushed and encouraged by a local retiree, the women were the main drivers of the MPA. They collaborated with their town council and FO (in which many

BARBARA CLABOTS



Maite MPA management team. Though burdened by many hours of unpaid domestic responsibilities, the women participate in all aspects of MPA management

of their husbands were members) to establish an MPA in their local waters in 2009. In the second location, Bino-ongan, 11 women who are not members of an association or the local FO volunteered their time to assist their town council in the establishment and maintenance of an MPA. In Bino-ongan, the women reported that the local fishermen and the FO were not even interested in establishing and managing the MPA. The women have successfully assisted the town council in performing baseline ecological surveys and delineating the boundaries of the MPA with homemade buoy lines of plastic bottles.

In Maite, the women involved in the MPA are mostly non-gleaners, and range in age from 23 to 73; they primarily manage their households and run a variety of small businesses. Though burdened by many hours of unpaid domestic responsibilities, the women participate in all aspects of MPA management. They take turns guarding the MPA day and night, reprimand violators, clean up the beach, maintain the guardhouse and buoy lines, collect crown-of-thorns sea stars, and monitor the condition of the reef by snorkelling. In comparison with a study site run by only fishermen, the women in Maite seem to have maintained better records, run a tighter budget, and displayed greater enthusiasm in sharing information with community members.

Though non-fishers, the women in both study sites were found to have an acute awareness of the state of local fisheries. Women acknowledged that the poor state of fisheries and uncertainty over their children's ability to catch fish and earn a decent livelihood in future are some of the primary reasons for their participation in the MPA. Some declared it was their duty as citizens to protect their local coral reef from destructive fishing methods. In the words of a woman from Maite: "We are the barangay (pioneers) who started this sanctuary. We have to preserve our sanctuary, our resources, the corals and the fish because we have so much illegal fishing in our area. So we have to make a guardhouse and a schedule of duty to fight illegal fishing. We have to protect our sanctuary for the future of our children. Maybe someday we will have many fish."

In contrast, the few fishermen in MPA management in Maite stated that they participated because they hoped to gain extra income not only from increased fish stocks but also from government projects external

to the MPA, like tree planting and seaweed farming.

Though small, the Maite MPA is a popular diving site among local tourist operators and has brought US\$6,000 into the community from collections of divers' fees over the past three years. Only 15 per cent of the profit is divided among all 50 members of the management team, giving each member an average of US\$6 per year. This cash benefit is too small in Maite to be considered a primary incentive. However, today, the increased catch size, which many community members attribute to the MPA, is seen as benefiting the whole community.

The local government staff reports other benefits of including women in coastal resource management, such as better understanding among community members and a significant decrease in conflict. In livelihood projects, women reportedly take greater initiative, delegate tasks, take care of details, and agree to put in the most labour, leading to improved project outcomes.

There are many reasons women should be included in the process of establishing and managing protected areas. Small MPAs often include the intertidal zone, so gleaners—mostly women—who collect shells and urchins at low tide are the primary resource users and, therefore, a critical stakeholder group. They not only have special knowledge of the intertidal zone that can be used for more effective management, but gleaning is also a primary local source of food—the fish caught by men is often sold but the marine invertebrates gathered by gleaners are often consumed at the dinner table.

Further, when an MPA is established, fishermen are often able to deal with the new restrictions it imposes by putting out their boats further from the coast; gleaners, however, have limited alternate fishing grounds. Clearly, gleaners and fisherwomen are the most marginalized by MPAs and should, therefore, considered primary stakeholders. According to MPA researchers, including women in natural resource management "increases collaboration, solidarity and conflict resolution". Conflicts over natural resources are common in the Philippines, where artisanal fishers battle daily against commercial boats and depleted fish stocks. To improve marine conservation as well as to empower women and promote gender equality, women must be systematically included in the management of MPAs. Y

The poor state of fisheries and uncertainty over their children's ability to catch fish and earn a decent livelihood in future are some of the primary reasons for women's participation in the MPA management in the Philippines.

On the path to self-reliance

Empowered with the right training and support, women in several coastal districts of Tamil Nadu, India, are turning to farm-feed production as a viable livelihood option

By **B. Shanthi** (drshanthi@ciba.res.in) and **K. Ambasankar**, senior scientists with the Central Institute of Brackishwater Aquaculture, Chennai, India

quaculture is one of the fastest-growing food-production systems in the world. A highly viable livelihood option for women, especially those living in coastal areas, it offers high returns and opportunities for livelihood diversification.

In India, 30 per cent of women in rural and coastal areas are directly or indirectly engaged in small-scale fisheries. A third of this population is estimated to be involved in various field activities linked to aquaculture, such as manuring fish ponds, feeding fish, harvesting, transporting and marketing fish, peeling shrimp in fish-processing plants, working in shrimp hatcheries, rearing mud crabs, producing aqua-feed, and preparing, processing and marketing value-added fish and farm products.

A key component of the aquaculture industry is aqua-feed production. The quality of ornamental fish and crabs depends directly upon the quality of the aqua-feed used during production. Today, the increasing global demand for crab has stimulated crab production in several Asian countries. With this, the demand for good-quality aqua-feed is

also on the rise. The production of aqua-feed is thus a potentially viable income-generating activity that can be gainfully incorporated into women's empowerment programmes.

Inspired by this goal, the Central Institute Brackishwater Aquaculture (CIBA), located in Chennai, India, has, since 2004, been training women's self-help groups (SHGs) in coastal areas to produce farm-made aqua-feed for domestic marketing. Fishfeed manufacturing units, with a productive capacity of 20 kg per hour, designed inhouse at CIBA, were fabricated and installed in the pilot villages of Thonirevu in Tiruvallur district and New Perungulathur in Kancheepuram district. Local SHGs were then trained in various aspects of production, including technology, manufacture, packaging and marketing of the feed. Once farm-feed production got under way, the women began marketing it to aquafarmers in nearby areas and also using it for their own aquafarming activities.

What does the farm-feed production process entail? The important first step is to start with a balanced formulation of aqua-feed. This would include a healthy mix of protein, fat and carbohydrate sources as well as vitamins and minerals. Protein sources might include any marine product, including dry fish, fish waste, acetes, squid waste, squilla, prawn-head waste, snail meal, clam meal and crab meal. Locally available plant protein sources like groundnut oil cake, gingelly oil cake, cottonseed cake, sunflower oil cake, soyabean meal and mustard oil cake may also be used. Energy sources might include broken rice, broken wheat, maize, tapioca, sorghum and other millets. Fat sources would include fish oil or cheaply available vegetable oils. Wheat bran and rice bran are also important ingredients for farm-made feeds.

The dry solid raw ingredients are measured, according to the formula, spread in a heap on a platform and thoroughly mixed. The ingredients are then ground in the grinder component of the feed-manufacturing unit. The materials are first coarsely, and then finely, powdered in the hammer mill. The powdered

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Marketing of farm-made aqua-feed produced by coastal women self-help groups is a potentially viable income-generating activity in Tamil Nadu, India

materials are passed through a sieve into the mixer. At this stage, additives such as binders, minerals and vitamins are added. After five minutes of mixing, liquid ingredients like fish oil and lecithin are added, along with water. The mixing process usually takes ten to fifteen minutes to complete.

The mixed materials are subjected to steam cooking to improve the digestibility of the feed and also to destroy any pathogenic microbes that might be present. The cooked feed materials are then passed through a pelletizer. The pellets that emerge are collected in trays and kept in a dryer at a temperature of 105° C until the moisture level goes below 12 per cent. During the drying process, the pellets are periodically turned to enable uniform drying. Finally, the dried pellets are sieved to remove debris, and weighed, packed and sealed in lined polythene bags. Labels are then stuck on the packets and the product is ready for Different grades of pellet feeds (starter, grower and finisher) can be manufactured for use as feed for shrimp, fish and crab.

The economics of farm-feed production work out well for the producer. The cost of one farm-feed manufacturing unit of 20-kgper-hour capacity is approximately Rs400,000 (US\$7,273). The manufacturing cost works out to about Rs30 (US\$0.55) per kg, and the feed can be stored for a period of up to two months. The relative ease of production, the reasonably good profit margins and the ready availability marketing opportunities through community networks combine to ensure that the women farm-feed producers trained by CIBA are well on their way to self-sustenance, thus proving that farm-feed production is indeed a viable livelihood option for women in coastal areas. Y

Q & A

Following the Fisherwomens' Convention on Livelihood Rights, organized by Pakistan Fisherfolk Forum (PFF) in July 2012, Mustafa Gurgaze (mustafagurgaze@pff.org.pk) of PFF, spoke to the PFF Senior Vice Chairperson, Tahira Ali Shah

Why was the Convention on Livelihood Rights organized and what did it achieve?

The meeting was organized to focus on the basic human rights of fisherfolk and the specific rights of Pakistan's fisherwomen who have been in the forefront of the struggle for the collective rights of fisherfolk in the State. It provided a refreshing break for fisherwomen and an opportunity to meet each other and to learn about their rights.

What is the role of women, particularly fisherwomen, in Pakistan?

Fisherwomen have always worked side-by-side with fishermen. They sometimes even go fishing alone and sell the catch in the markets. Fisherwomen want to participate in all walks of life and to make their own identity. But there is religious extremism in our society, which started under General Zia's regime and continues to impact some of our laws and practices—the rape law and *karo kari* (honour killing), for example—depriving women of their basic rights. In the tribal areas, women are treated as second-class citizens. Recently, the government has introduced some laws which protect women. We are expecting a brighter future for women in Pakistani society and hope that soon they will enjoy equal rights.

What are the issues that fisherwomen in Pakistan face?

Earlier, fish was abundant and easily accessible. Today, because of industrial pollution and other reasons, fishing, in both sea and the Indus Delta, is no more a well-paying profession. The entry of external communities—Bengalis, Beharis and Pakhtoons—in fishing is further depleting fish resources. Fisherwomen are forced to take up work in fish-processing industries. The conditions of work in these factories are unhygienic and harsh, affecting pregnant women very badly. In addition, wages are low. Many women are taking up work in other industries such as the garment industry.

How are fisherwomen in Pakistan organized?

PFF is a social movement in which the fisher community is linked together through units. Some units are only for men; some for women; some for both. The office bearers in some joint units are women. PFF is focusing on gender mainstreaming and has increased women's membership from 22 to 34 per cent in the last three years.

What are your goals and future plans?

Literacy, awareness and equality for women. Also, we want women to be at the forefront of struggles for human rights and sustainable livelihoods and against the depletion of fish resources, environmental degradation, and the destruction of the Indus Delta. We want legislation against *jirga* (assemblies of tribal elders) and an end to unjust laws like *karo kari* and other forms of violence against women. **Y4**

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RECOMMENDS YEMAYA

REVIEW

Shifting Undercurrents: Seaweed Collectors of Gulf of Mannar, Tamil Nadu

2012. 20 min. Directed by Rita Banerji. **English and Tamil**

By Sumana Narayanan (icsf@icsf.net), Programme Associate, ICSF

roduced by ICSF, the 20-minute documentary Shifting Undercurrents explores the trials and tribulations of a community of seaweed collectors in India struggling to retain access to seaweed resources within a marine protected area. The film won the second prize at the 9th Annual Jeevika: Asia Livelihood Documentary Festival in 2012.

Spread over 560 sq km and consisting of 21 uninhabited islands off the coast of the south Indian State of Tamil Nadu, the Gulf of Mannar Marine National Park is home to about 5,000 women who rely on the park's natural resources for their livelihood. Each morning, these women head out to sea where they spend up to four hours free-diving to collect seaweed. Using minimal equipment and relying on their inherent skills, they handpick selected species of wild seaweed, which finds great demand in local markets.

Seaweed collection has sustained the lives of these women and their families for several generations. But now they find themselves struggling to cling on to their primary source of livelihood in the face of a slew of legally resource-management conservation restrictions. This film tries to understand the various dimensions of the intensifying struggle.

The Gulf of Mannar was declared a national park in 1986 under India's Wildlife

(Protection) Act (WLPA) of 1972, which bans resource extraction from national parks. Since the year 2000, seaweed collectors and fishers have borne the brunt of the Forest Department's implementation of the law. Although the park's resources face several major threats, such as large-scale industrial pollution, overfishing by mechanized vessels and the commercial cultivation of exotic seaweed species, enforcement efforts target primarily the small-scale livelihood activities of local communities.

Ironically, it is the government that promoted seaweed collection as an incomegenerating activity in the 1960s, an activity it has declared illegal today. What are the arguments being used to penalize seaweed collection and how much truth do they carry? Are the self-regulatory activities of the fishing communities being recognized or ignored by the government? What alternative livelihood sources are being offered and how viable are they? This film explores all these critical issues and also raises other important questions that have larger policy implications.

Is it appropriate to use an essentially terrestrial framework like the WLPA to conserve a very different ecosystem, namely, the marine ecosystem? How can the customary fishing rights of fishing communities be recognized and protected? What legal framework will allow for the meaningful participation of fishing communities in the governance of the national park? How can better co-ordination between the Forest Department and others such as the Fisheries Department be ensured?

many-sided discussions continued struggles depicted in the film shed important light on the shifting undercurrents of the women's efforts to seek recognition and respect for their source of livelihood.



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Writers and potential contributors to YEMAYA, please note that write-ups should be brief, about 500 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

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

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