

# A Sea of One's Own

**Mariculture has driven women's empowerment through better incomes and greater bargaining power. This article argues for active State intervention to protect the interests of women in the sector**

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**M**ariculture, which includes mussel farming, seaweed farming and open-sea cage culture, is the science of cultivating useful organisms in a marine environment. Globally, mariculture production has gone through a period of rapid growth in recent times, from 0.5 mn tonnes in 1950 to 10 mn tonnes in 1990 and to 36 mn tonnes by 2007. Currently, 106 nations are engaged in mariculture production. Just as agriculture makes land-based production systems a contested space, mariculture makes the marine production system also a contested space, characterized by the struggle for human livelihood. This struggle has several ecological as well as political dimensions. One such dimension is gender.

Analyzing coastal rights from a gender perspective is fraught with various problems. On the one hand, marine space is generally conceived as a common-property system with customary rights, whose institutional complexity is higher than other forms. In the case of marine customary rights, gender aspects do not get discussed because these rights are historically considered as an exclusive male domain. Further, in situations

where women get increased access to common-property resources, it is not just the increase in women's command over economic resources that has a critical bearing on gender relations, but also, as social scientist Bina Agarwal has pointed out, the 'process' by which that increase occurs. The levels of analysis that are usually taken into account by gender scholars, such as household, community, market and State are inadequate to provide a complete political ecology perspective. They also tend to render static what is often an extremely dynamic process. Finally, if in the agrarian economy, the exclusion and dispossession of women from the property-rights regime is leading to political as well as intellectual struggles, such a trend is yet to emerge in the marine common property system. But absence of resistance doesn't mean absence of inequality. This is the context in which the following analysis of growth in mariculture along India's coastal regions has been undertaken.

The study on which the present paper is based was conducted in different locations in India where various forms of mariculture technology were getting diffused: mussel farming in Padanna and Kollam in the State of Kerala; open-sea cage farming in the regions of Visakhapatnam (in Andhra Pradesh State), Karwar (in Karnataka State) and Balasoor (in Orissa State) and seaweed farming in Ramanathapuram District in the State of Tamil Nadu. A blend of methods was used, which included household socioeconomic surveys and case studies of different stakeholders. The key findings from the study are summarized here.

Mussel farming in Kerala has a very interesting trajectory. It is a technology originally developed for open-sea mariculture in the late 1970s by the Central Marine Fisheries Research Institute (CMFRI). It gained popularity as a tool for women's empowerment in coastal Kerala since 2000. Padanna, an estuarine village in the coast of north Malabar, where the first demonstration was successfully conducted, acted as the epicentre of mussel farming in India. The driving force behind the diffusion of this technology was a Muslim male entrepreneur in the village who took the initiative to organize commercial production through women's micro-credit or self-help groups (SHGs) in the village. As a result, total production of farmed mussel spread to five districts of Kerala, and reached an estimated

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Seaweed farming in India represents a transition from organized 'collection' to 'culture', at Rameswaram, Tamil Nadu, India

20,000 tonnes in 2010, with more than 3,000 women becoming owners of mussel farms.

What made the programme easy for women to adopt was that most of the activities like seeding in specially stitched cloth bags tied on ropes, growth monitoring, harvesting, cleaning, shacking and so on, could be easily done by women. It is almost a 'do-nothing farming' with a growth period of four to five months. Another important factor for its spread was the financial subsidy provided by the State government of Kerala through its *Kudumbashree* programme.

As a coastal enterprise, seaweed farming in India represents a transition from organized 'collection' from the sea carried out on a commercial basis since the late 1960s by fisherwomen of the Gulf of Mannar region to 'culture', again carried out mainly by women, since the year 2000. Seaweed mariculture in India received a decisive impetus with the entry of red seaweeds like *Kappaphycus alvarezii*, involving cultivation techniques standardized by the Central Salt and Marine Chemicals Research Institute (CSMCRI) and popularized by Pepsico. Production of *Kappaphycus* in its dry form increased from 21 tonnes in 2001 to little more than 700 tonnes in 2009. The cultivation was organized mainly in the form of contract farming under Pepsico until 2008. Afterwards, it was continued by Aquagri Processing Private Limited, a company formed by former Pepsi officials to whom Pepsi transferred its seaweed business operations in India, along with a global patent. The farming also receives support from the State in terms of subsidy as well as capacity building. In the absence of leasing policies, the State exercises control in two ways: one, by making training in seaweed cultivation by a State-run training institute compulsory, and two, by restricting the cultivation to persons holding a ration card. About a thousand people, mainly women, are currently engaged in *Kappaphycus* farming.

Open-sea marine cage culture is the latest innovation in the Indian mariculture scene. The first demonstration of open-sea cage farming was carried out in Visakhapatnam in 2007-08 by CMFRI. The technology was transferred to select fishermen's groups which received financial support from the National Fisheries Development Board (NFDB) and technical backup from CMFRI. The innovation is on the verge of takeoff on a wider scale. Currently, about 600 fishermen are engaged in open-sea cage farming in 11 locations in the country.

Certain issues of gendered analysis are common to all the different forms of mariculture described above. First, mariculture has proved to be a successful women's empowerment platform. This is

true for all except the open marine cage culture technology. The women beneficiaries earlier depended on the collection of natural resources from the wild—a highly labour intensive activity. With mariculture, empowerment is manifested across various dimensions of women's lives: economic, as income under their own control has increased; political, as more women enter decision-making bodies; and social, as, for example, women are able to send their children to school, to collectively exert pressure to take steps against vices such as alcoholism and so on. As the disposable income available to a woman has improved, so has her status, leading, in turn, to increasing her 'bargaining power' within the family and community structure.

Second, the experience points to the critical role of the State in ensuring gender access. In the case of mussel farming, the programme got support from the State agencies like Development of Women and Children in Rural Areas (DWCRA), implemented through the *Kudumbashree* initiative. Since these agencies had women's empowerment as their stated mission, financial support in terms of subsidies and loans were served only to women farmers. But once the profitability of the technology was established by the women SHGs, the enterprise became bankable and banks came forward with loans. However, the slogan of women's empowerment could not be kept up for long as competition within the banking sector increased after the liberalization of the economy. 'Initially they [the men farmers] had to include at least few of us [women] as members in the group to avail loans and we felt a sense of superiority. ...But now banks give loans to men-only groups also. So we are now competing with men', said a woman mussel farmer in Padanna. The women mussel farmers fear they may lose out to male muscle power soon. In the case of seaweed farming, the diffusion stage got financial support from the State through SHGs. Since 50 per cent of the members of a SHG had to be women, the room for gender imbalance was less. But, as in the case of mussel farming, the lucrative nature of seaweed farming is luring more men today.

Third, the importance of gender balance in common property rights in coastal areas is also important for another reason. Women tend to be better economic stewards at home, and this advantage would extend to ecological stewardship also. Ensuring a rightful share for women in ownership of natural resources would ensure more equitable and responsible management of natural resources.

To conclude, the most important learning from the study is the ambivalence of

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the State. On the one hand, the State, by providing platforms such as SHGs is a positive 'bargaining' force in the intra household domestic space; on the other hand, however, it is not as ready to play the same democratizing role in more public 'common

access resource' spaces. It is essential for gender scholars the world over to proactively support the cause of women mariculturists by arguing that State intervention should be gender-biased in protecting the interests and role of women farmers. ❖