

EMPOWERING WOMEN THROUGH AQUACULTURE INTERVENTIONS – THE WAY FORWARD

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The article discusses ICAR-CIFA's efforts to empower women through aquaculture-related interventions. Through demonstrations and training, several technologies, including integrated fish farming, grow-out culture, and the manufacture of carp seeds, were transferred to women SHGs, improving their socioeconomic status. The idea that women can succeed in aquaculture is supported by evidence from other south-east Asian nations. Emphasis is placed on the need for in-depth research, the documentation of women's achievements in aquaculture development, sex-segregated data on women's contributions to aquaculture, socio-political perspectives on gender equality, and the necessity of affirmative action to give women an equal opportunity to realize their potential.

Keywords: Empowerment, gender mainstreaming, nutritional security, small scale aquaculture

INTRODUCTION

Women's empowerment can be defined to promoting women's sense of self-worth, their ability to determine their own choices, and their right to influence social change for themselves and others. Friedman (1992) conceptualized empowerment as providing three types of power: social, political, and psychological power. Social power involves access to certain assets such as information, knowledge skills, participation in organizations, and financial resources. Political power includes access to decision making, particularly decisions that affect a person's future. In consequence it develops and improves the psychological power and self-esteem to access their social and political powers. Hence, participation is a pre-condition for empowerment in a sector. This too brings the organizational empowerment of a woman. Hence, from a feminist perspective, interpreting 'power over' entails understanding the dynamics of oppression and internalized oppressing. Empowerment is thus more than participation in decision-making; it must also include the processes that lead people to perceive themselves as able and entitled to make decisions. And, women's engagement in fisheries can be viewed from social, political and technical perspectives, all of which show that the role of women is often underestimated.

Why women need to be empowered?

Empowerment through education or developing self-esteem through participation in a sector can able women to contribute to the economy of family as well as socioeconomic development of the country. Empowerment cannot be fully achieved without the women's full participation as well as employment. When women are living safe, fulfilled and

productive lives, they can reach their full potential contributing their skills to the workforce and can raise happier and healthier children too. Till date the women's participation is very low with its pace of increase. Small-scale production, post-harvest industrial and artisanal processing, value addition, marketing, and sales are still dominated by women. Women's presence, influence, and interests in aquaculture are therefore invisible due to a lack of gender-disaggregated statistics. Gender-blindness inhibits women's entrepreneurial prospects and workplace protection; hence statistics gathering should be compulsory in all countries. Women are displaced or relegated to the lowest paid, low-grade jobs as aquaculture intensifies and scales up due to gender-blind aquaculture methods.

Women do aquaculture- evidences are galore

Aquaculture is the emerging sector where women can benefit from the technologies leading to their empowerment and contribution to the development of fisheries. One reason why women are invisible in aquaculture policy is a lack of comprehensive and current data on women in the industry. Usually other than finger counted entrepreneurs women are involved in deweeding, culturing aquatic macrophytes, control of predatory and weed fish; pond fertilization etc. Women often have lower status positions and face salary disparities for the same work, such as in Chile's salmon processing industry (Ramirez and Ruben 2015). Women's engagement in aquaculture varies depending on the kind and scope of the industry. But, these days women are seen to be engaged in seed rearing, feeding, culturing table fish, tank culture of fish like Anabas and Tilapia, pearl culture, prawn culture, ornamental fish culture, post-harvest technologies and making valuable products from fish waste etc. Women's engagement, however, is hampered by a number of socioeconomic factors. Furthermore, there are several policy and infrastructure challenges that stand in the way of increasing women's responsibilities in aquaculture. Discrimination limits women's protection at work and their entrepreneurial opportunities in this expanding sector (Williams *et al.*, 2012; Brugere 2015). When aquaculture production intensifies, it increases the labour burdens on women and youth, affecting their production, productivity, and welfare (FAO, 2016). In comparison, women in small scale fisheries are slightly better recognized in policy than is the case in aquaculture because fisheries research has provided more evidence of women's contributions, and non-government organizations (NGO) and gender equality in small scale fisheries is now included in influential internationally-recognized documents (FAO 2015). Rural women are engaged in a host of activities in the cultural practices contributing to the production systems (Bhanot *et al.*, 1999).

Women and men frequently work together on small farms, performing complimentary tasks. Women work at the bottom of the pay scale or are unpaid in medium and large-scale aquaculture. Women are compensated at the bottom of the wage range or serve as unpaid auxiliary employees in medium and industrial scale aquaculture, such as when their husbands are the primary labourers. Women's engagement declines when production intensifies and economic returns rise as a result of infrastructure and technological investments, and they rarely become managers, like in shrimp aquaculture in

north east Vietnam and catfish aquaculture in Nigeria (Veliu et al. 2009; GAF6 Report 2017). However, it has been witnessed that women are seen engaged in a range of aquaculture production and value chain activities in south Pacific Asian countries, but may not be in direct production system. In particular, women are predominating in marketing and processing, with their involvement estimated to be 1.5 to 1.7 times higher than men's (FAO, 2017). These appear to be time-consuming and require greater patience. Women play an important role as managers of small family enterprises, such as fish ponds, and so increase their families' income and nutrition, according to insufficient evidence. They do, however, have limited control over ponds and aquaculture inputs, so they only participate in production to meet their own needs (De *et. al.*, 2020).

No clear outcome for women and factors that enable or constrain these is visible. This depicts a critical gap in the knowledge needed for effective aquaculture programmes and policies. Addressing this gap and being a faster growing sector for economic growth as well as meeting the food security of a nation, aquaculture has notable potential to contribute to women's economic and social empowerment, of course to India's broader performance on gender equality and economic development indicators.

One of the most serious barriers to women's engagement in aquaculture is a lack of literacy, according to reports. In some nations, female-male student parity has been reached as a direct result of national governments promoting girls' education, changing preconceptions about women's professional career opportunities, and the provision of aquaculture-related courses directly or indirectly (Williams *et al.* 2012). Educated girls, on the other hand, rarely select aquaculture as a prospective vocation in most nations. Today, more women are graduating from higher education institutions with degrees in aquaculture, and gender parity has been achieved in some situations. More women are working in high-skilled jobs.

Women are hired and promoted in significantly lower numbers than advanced degree completion rates in fisheries and aquaculture indicate, despite the fact that education can provide women access to a wider range of aquaculture activities (Egna *et al.* 2012).

Small scale aquaculture and household nutrition security

In India and other Southeast Asian countries, women play a vital role in small-scale aquaculture. Aquaculture, according to studies conducted in India and elsewhere, is a powerful instrument for empowering women, particularly those at the bottom of the pyramid. Women are actively involved in all aspects of carp cultivation, from seed production through grow-out, and this has resulted in a socioeconomic betterment in their life. Linking women stakeholders to credit, technology, training, and markets, it is said, must be included into the project/intervention in order for women to make a major and valuable contribution to the blue revolution.

Aquaculture is increasingly focusing on fewer farmed species in order to provide more animal protein, however productivity gains alone may not always meet the micronutrient demands of farmers and their families (Bogard *et al.*, 2017). Aquaculture programmes that include a nutrition component, on the other hand, are showing promise in terms of improving nutrition, increasing household income, and empowering women. Cultivating small nutrient-dense species (Haraksingh-Thilsted, 2012), growing species for home use alongside species designated for market sale, and offering nutrition information and extension on eating habit and patterns are some of the nutrition choices.

Hence, home makers at rural level may get expertise of tank culture of *Anabas*, murrels and mola etc. Their breeding, seed raising and table fish culture along with ornamental fish and pearl culture in tanks can not only empower the women beneficiaries, rather keep their family's nutrient secured through income generation and can bring better future for their family by wealth generation.

ICAR-CIFA's initiatives for empowering women

In the last 30 years, the ICAR-Central Institute of Freshwater Aquaculture (CIFA) in Bhubaneswar has run various knowledge transfer programmes (1987-2016). While few projects have benefited mainly farm women, some have benefited a large number of women (De *et al.*, 2019).

The projects that had been operated by the Institute with special focus on women during last ten years are encased below. A host of technologies developed by ICAR-CIFA were promoted to ensure livelihood and economic as well as nutrition security of the rural women. These efforts have benefited the most vulnerable members of society, particularly those living in distant and backward places.

2009-12: Transfer of technology of composite carp culture through demonstration among SC/ST women in Boudh and Purulia district. The project was carried out in Kashipore block of Purulia (West Bengal) and Kantamal block of Boudh (Odisha). 200 tribal women in two districts were benefitted. The mean fish yield of adopted ponds rose to 795.98 kg/ha in 2010-11 from pre-adoption production level of 378.79 kg/ha in 6-8 months. Average income from the adopted ponds was worked out to be Rs 42513.47 per ha.

2011-14: ICAR-CIFA played an instrumental role in developing two ornamental fish villages in 2011. Ornamental fish rearing (Black molly, Red molly, Angel fish, Gold fish etc.) in the backyard has caught up with the women in Landijhari (Deogarh district of Odisha) with as many as 60 cement tanks being used for this purpose. The local fishery officer initiated this new way of income generation among the women. The Agricultural Technology Management Agency (ATMA) also pitched in by providing financial assistance for construction of rearing tanks. Capacity building and exposure was provided by the institute. The scientists of Krishi Vigyan Kendra, Deogarh popularized the new vocation in the village by organizing awareness

camps (Nath *et al.* 2012). With all the families engaged in rearing ornamental fish the village came to be known as ‘ornamental fish village’. Another ornamental fish village has also been developed recently at Sarauli in the same district with the partnership of ICAR-CIFA, ATMA and State Fisheries Department to promote livelihood development of women SHGs.

2011-14: Barakhandapat SHG having 10 women members in Jodichatara village of Patna cluster in Keonjhar district of Odisha was introduced to ornamental fish farming. A combined effort was made by NAIP and ICAR-CIFA to improve the sustainable livelihood of the poor women. Skill training, exposure visit and demonstration were organized in order to encourage them to take up ornamental fish farming. For marketing a linkage was developed with Aqua World shop. The expected revenue from the unit is estimated at Rs.12,000/unit/year during the first year (Swain *et al.*, 2011).

2012-15: Under the project “Mainstreaming gender concerns in freshwater aquaculture development- an action research”, 160 women belonging to Khordha and Puri districts of Odisha were provided skill training in fish seed rearing, composite carp culture and value addition technologies. Smt. Ranulata Bhoi, an industrious entrepreneur and self- reliant woman from a rural village, Paribasudeipur of Baliana block, Khordha district of Odisha has been successful in producing fish hydrolysate. Presently she is producing 200 litre of this bio-fertilizer annually and earning an income of Rs. 16000/- per annum. She was felicitated by different organisations such as ICAR-CIFA, Bhubaneswar, Doordarshan and ‘Yes We Can’ – a volunteer organization, Odisha.

2016-20: Farmer FIRST project is being operated in 4 villages of Khordha district of Odisha which involved more than 400 beneficiaries. Scientific carp culture, carp seed rearing and minor carp culture was promoted in the adopted villages. Training was imparted on improved practices of aquaculture. Species diversification by incorporating minor carp in backyard pond was popularized to attract women towards aquaculture. CIFA promoted Bhargabi Fish Farmers Producers Company Limited in Baliana, Khordha district.

An in-house project has been initiated to develop the index for measuring women’s empowerment in aquaculture basing on various domains selected from past work experiences and the literature studies. The domains are like access to and control over resources and services, control over use of income, autonomy in production, ability to decide independently, participation in social and economic activities, workload Vs. leisure, well-being of family, domestic harmony, self-confidence, attitude towards aquaculture and knowledge on aquaculture etc.

2020 – Aquaculture brings economic prosperity and nutritional security to tribal WSHGs in Koraput District of Odisha.

Mutyala Maa Women Self Help Groups (WSHG), Jamunda Village, Jeypore Block of Koraput District comprising of more than 80% tribal were adopted under TSP Scheme of the institute in collaboration with State Fisheries Department, whose main source of income is from agriculture and allied activities. They were provided with different aquaculture inputs. The women beneficiaries were trained on different aspects like pond preparation, pond fertilization, feed and feeding, seed rearing, and culture etc. Aquaculture being an active component had created good impact on livelihood of the group members during the Covid-19 pandemic crisis, through adoption of aquaculture in the community pond.

During the culture periods, around 20-30% of total fish produced had gone to the nutritional security of the adopted member families of the WSHG. The rest was sold in the local market thereby supporting the nutrition of the locality. The revenue generated was distributed among the members to meet their daily requirements and part of the income was maintained in the common fund for input procurement and other emergency need. The present success by the adopted WSHG through aquaculture not only brought a ray of hope to the remotely residing tribal communities, but also, equipped them to utilize the available water resources for income generation. Aquaculture not only provided them the scope for job opportunity, rather it helped in boosting their socioeconomic conditions. More aquaculture activities encouraged the WSHG to connect with the financial institution like Bank for their financial transactions from which they were earlier deprived of. This activity also provided the WSHG members socio-economic development and more importantly in bringing happiness and a smile in their hard-working faces (ICAR-CIFA Annual Report-2020)

Other than these projects achievements, like other ICAR-institutes ICAR- CIFA has created a good number of women entrepreneurs in different specified commodities of aquaculture like fish seed production, post-harvest and pearl culture etc.

Support to Women SHGs during Covid-19 Pandemic

The outbreak of COVID-19 has disrupted the activity of all sectors, including aquaculture. Health and hygiene is the most important factor to be addressed before taking any activity. Keeping this in view, women staff of ICAR-CIFA and KVK undertook different activities to ensure the better working atmosphere of the institute. ICAR-CIFA, having one of the largest fish farms in India, needs to undertake constant farm maintenance. As a result, agricultural workers were taught to practice social distancing, maintain personal cleanliness by washing their hands frequently with soap, wearing face masks, wearing protective gear, and cleaning equipment and machinery. Workers were encouraged to take safety precautions and maintain social distance at all times during the field operating process. Major concern was shortage of “the mask” in the market. Like other natural calamities this time also women staff of ICAR-CIFA and KVK has been harbingers to provide essential commodities to our staff during this critical period. As encouraged by Commissioner-cum-director, Mission Shakti several WSHGs started preparing homemade double layer cotton facemask to check

the spread of COVID-19 pandemic. ICAR-CIFA procured 500 cotton masks from Lakheswar SHG, Bhubaneswar and distributed among staff in office and farm. “The masks are reusable after proper washing and sundry for 2-3 hours”, it was regularly explained to all field staff.

COVID-19 pandemic brought huge losses across different income groups. In this critical time, women scientists and technical officers of ICAR-CIFA and KVK visited the villages and, through personal discussions, understood the need. Women were encouraged to start the nutritional kitchen garden, and 48 families of Nandghara Sahi and Patarbaga Sahi of Basantapedi were provided with eight types of quality hybrid vegetable seed materials for their kitchen garden.

To support the women farmers, an arrangement was made to sell their farm produce in the ICAR-CIFA campus. Before their entry to the campus there was a thermal screening and use of mask was made compulsory for all of them. They were facilitated by providing space and sanitizer. They were guided for maintaining social distance and other precautionary measures while selling their farm produce. The price of the vegetables was fixed jointly by participating farmers and the institute so that farmers could be benefited more. Some of the farm produce sold by the group members were purely organic. There was an overwhelming response from the staff of ICAR-CIFA to purchase the fresh farm products directly from the farmers.

Lessons learnt and way forward

- Women's participation in fisheries can be seen from social, political, and technical viewpoints, all of which reveal that women's contributions are often overlooked, despite their best efforts. Inadequate acknowledgement of women's efforts stymies long-term development and contributes to rising poverty and food insecurity.
- It is argued that obtaining a higher degree boosts job opportunities. Similarly, working women can contribute to their families' economic well-being as well as the socioeconomic development of their towns and countries as a whole. Women's complete engagement in education and employment is required to achieve full empowerment. This could be expanded for women who are directly or indirectly involved in aquaculture.
- All aquaculture stakeholders have duties in order to meet the SDG targets. Gender equality must be incorporated into aquaculture planning, development, monitoring, and evaluation, which will necessitate sector-wide policy changes backed up by new technical tools.
- Accurate, regular and a sharp sex-disaggregated statistic for aquaculture is not yet collected in breadth and length of most countries. It would shed light on how many women are employed, the types of work they do, and how this is changing over time (Egna *et al.* 2012).

- Gender research conducted in multidisciplinary programmes could offer insight on the most pressing challenges of gender inequality, particularly what causes women to lose (or keep) authority over their activities as the scale, intensity, and economics of aquaculture production expand. Measures such as organizing female producers and entrepreneurs, building their capacity, raising awareness and willingness of aquaculture stakeholders to implement the measures, or changing the design of aquaculture technologies are crucial in this endeavour.
- It should be emphasized that, in addition to continuous efforts, development toward women's empowerment is not linear. Longer timeframes for research projects and development interventions resulting from them are required to account for possible initial regression and to move beyond the economic dimension of women's empowerment to trigger the deeper societal, institutional, and individual changes required achieving empowerment (Choo and Williams 2014).

Finally, we, as women and men, must be the agents of change in gender relations in order to achieve a more profound societal shift. We may start questioning the ingrained and humiliating way women's work is portrayed and perceived in aquaculture on an individual level (and often in other sectors). We may contribute to the transformation of our societies towards more equality by confronting our own prejudices about gender roles.

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