Peertechz

LIFE SCIENCES GROUP

ANNALS OF Marine Science OPEN ACCESS JOURNAL

ISSN: 2640-2300 DOI: https://dx.doi.org/10.17352/ams

Review Article

Review on the role of women along the aquaculture value chain in Kenya

Mercy Chepkirui[1]*, Paul Sagwe Orina[1], Tonny Orina[2], Cecilia Githukia[1], Jared Ochingo[1] and Judith Kemunto Achoki[3]

[1]Kenya Marine & Fisheries Research Institute (KMFRI), Kegati Aquaculture Centre, P. O. Box 3259-40200, Kisii, Kenya

[2]Faculty of Agriculture, Department of Animal Sciences, Jomo Kenyatta University of Agriculture and Technology, Nairobi, Kenya

[3]Kisii University, Biological Science Department, P. O Box 408-40200, Kisii, Kenya

Received: 14 April, 2023
Accepted: 21 April, 2023
Published: 22 April, 2023

***Corresponding author:** Mercy Chepkirui, Research Assistant, Department of Aquaculture, Kenya Marine & Fisheries Research Institute (KMFRI), Kegati Aquaculture Centre, P. O. Box 3259-40200, Kisii, Kenya, Tel: +254795371479; E-mail: kakuumac@gmail.com

ORCiD: https://orcid.org/0000-0002-5607-3423

Keywords: Aquaculture; Women; Value chain; Value addition; Production

https://www.peertechzpublications.com

Check for updates

Abstract

Aquaculture is perceived as masculine work in most regions despite several years of women's involvement in the sector. Women participate in almost all activities of the aquaculture value chain such as pond construction, sorting of seeds, fertilization of ponds, making and mending of fishing gears, fish harvesting, processing, value addition, transport, and marketing. The majority of women engage in aquaculture to earn income and food for the household. Women's involvement in aquaculture has led to the creation of more job opportunities thus increasing income generation for rural women. Nevertheless, women face several challenges in aquaculture with the most critical one being limited access to income despite their heavy involvement. They also lack limited access to certified seed, high cost of feeds, and collaterals to access credit. The promotion of aquaculture, gender equity, and empowerment of women and youths has been promoted through various initiatives including Sustainable Development Goals and Blue Economy. However, gender discrepancies are still high despite both gender playing fundamental roles in aquaculture development. Therefore, there is a need to promote gender equity as it will lead to recognition of their full potential towards increasing production, productivity, processing, trade, and economic growth.

Introduction

Aquaculture contributes significantly towards the achievement of Sustainable Development Goals (SDG), Blue Economy, and Kenya's Vision 2030. However, social, economic, and cultural aspects strongly influence men's and women's participation in the sector over decades [1-4]. Unlike ancient times, the position of women in the community was only limited to household errands and their involvement in other family support activities was basically non-existent. This was due to illiteracy and delusion about women's skills and men's superiority. In spite of the progress and evolution in almost all the sectors, fisheries is still regarded as a male-dominated industry [5-9] despite women playing a significant role along the value chain [10,11]. Women participate in pond construction and management, fishing, feed formulation, feeding and monitoring, data collection, record keeping, harvesting, value addition, processing, and marketing [12]. Globally, statistics show that women constitute half of the labor force [13] as 14% engage in the primary sector of fisheries and aquaculture [14,15]. For instance, 80% of women market seafood in West African countries, 60% of women in India play a crucial role in fish processing factories, 80% constitute the workforce in Vietnam, and 60% form part of fish farmers in Bangladesh [16]. Further, women are highly involved in fisheries-related activities along the Lake Victoria region. Past research indicates that women participating in fishing activities are not recognized as 'fishers' and show a high degree of discrimination as they participate in low-status, low-paid, and less-skilled jobs disqualifying them from receiving social benefits [15,17] The role of women goes downhill at a market level where they face price fluctuations for their products due to sex for trade from male counterparts.

Citation: Chepkirui M, Orina PS, Orina T, Githukia C, Ochingo J, et al. (2023) Review on the role of women along the aquaculture value chain in Kenya. Ann Mar Sci 7(1): 021-024. DOI: https://dx.doi.org/10.17352/ams.000034

This, therefore, limits market opportunities to locations close to their homes. Further, they are not supported by legislation and policies for equality and lack equal access and benefits from resources, markets, technologies, and services [15]. Women work almost in all areas along the value chain but their opportunities are still not acknowledged and are unrewarded in aquaculture growth due to discrepancies in social, cultural, and economic circles [2,5,17,18].

Therefore, overcoming sociocultural norms that suppress women's rights, privileges and opportunities promotes gender equity in all sectors by enabling women to have equal access to resources and opportunities just like men to increase yields and production [19]. Strategies and policies must ensure there is gender balance through the promotion of women and youth empowerment. According to Goal 5 of Agenda 2030 for Sustainable Development Goals (SDGs) promoting the achievement of gender equality and empowerment of all women and girls" through the integration of gender equality into fisheries and aquaculture sector help in eradication of poverty and hunger, promote gender equality and empower women [20]. This will also help meet changes in market, policy, and strategy. This involves allowing equal participation in decision-making, ensuring adequate equipment, proper infrastructure to enable access to the markets, and provision of physical and capital resources to meet their needs and aspirations. Also the provision of training and formal education to improve profitability and sustainability as well as provision of employment opportunities in fish processing industries aimed at supporting their enterprises, increasing income, and reducing marginalization [21,22].

Gender role in aquaculture

Aquaculture is commonly perceived as masculine work but women also play a pivotal role in the sector's development [5]. Despite various reports indicating aquaculture technologies are gender friendly; hatchery, production, transport, and service delivery are vastly skewed toward male counterparts [23]. Women's labor is invisible and undervalued, most especially in their indirect roles in processing, value addition, and marketing [15]. They are often considered unremarkable extensions of their never-ending domestic and caregiving tasks. Further, there is a perception that men fish while women participate in processing and marketing since women are perceived as the physically weaker sex [24]. Despite the above norms, both males and females engage in aquaculture activities such as pond construction, sorting of seeds, fertilization of ponds, making and mending of fishing gears, fish harvesting, processing, value addition, transport, and marketing [25-28]. Previous studies reported that women actively participate in the supply of aquaculture inputs [29,30]. Normally, men own more fish ponds and management operations compared to females [6]. Despite the determinations of various agencies to stimulate aquaculture and farming societies, gender disparity is still high although past studies reported that both genders play an important role in aquaculture [15,31].

Despite difficulties of diverse magnitude for women's engagement in aquaculture, there exists a huge potential to contribute significantly to the sector. The majority of women engage in aquaculture to earn income and food for the household and community development in rural areas as well [32-35]. Women's involvement in aquaculture has led to the creation of more job opportunities thus increasing income generation for rural women [25]. Past studies have reported a significant 70% of direct beneficiaries from aquaculture earnings are women. Thus, this is the most significant benefit that has resulted from the development of small-scale aquaculture in rural communities. Further, there has been a significant increase in the socio-economic condition of women who are involved in aquaculture-related enterprises. This has changed women's perspective in terms of gender roles, decision-making, management, and income-generation activities in the sector.

However, women face several challenges in aquaculture with the most critical one being limited access to income from the sector and enterprise development strategy despite their heavy involvement at the family level [1,3,6,19]. Further, limited access to certified seed and the high cost of feeds is prohibiting women whose access to credit is low compared to men thus the overall effect on their productivity.

Despite several years of involvement in aquaculture, the majority of aquaculture value chain actors still lack access to credit [3]. Access to credit facilities results in substantial upgrading within the households thus influencing positively productivity and livelihoods. While men may use land title deeds as collateral for access to credit [36], culturally women are disadvantaged since the title deed in the family set-up is customarily under the man's name. Also, women lack statutory rights and the patriarchal land ownership system favors men and this has been culturally preserved for many decades in most communities [10,37]. Therefore, women rely on family contributions and their own savings for financial survival [31].

Gender roles in fish processing and marketing

Women constitute up to 85% of the workforce during fish processing and marketing aimed at reducing post-harvest losses [5,15,13,23]. This is because marketing is less time-consuming thus women can easily multi-task between marketing and managing their households. Further, the actors in post-harvest management activities along the value chain constitute up to 58% of women [14]. This includes; descaling, gutting, drying, filleting, and preservation for later consumption. This helps them gain better earnings and it also makes fish accessible to distant markets in the interiors of the country [38]. Fish processing is divided into full processing and semi-processing. Women normally participate in semi-processing since huge capital investment is needed for full processing. Depending on the marketing location, fish is either sold as whole, gutted, scaled and gutted, smoked, fried, sun-dried, or grilled. Fresh fish, either whole or scaled and gutted may also be chilled during transportation to the market. The processing mainly preserves and improves the flavor of the fish. There is a greater variety of fish products in the market than on the farms because fish is extremely perishable and thus requires high-level management.

Citation: Chepkirui M, Orina PS, Orina T, Githukia C, Ochingo J, et al. (2023) Review on the role of women along the aquaculture value chain in Kenya. Ann Mar Sci 7(1): 021-024. DOI: https://dx.doi.org/10.17352/ams.000034

Women, just like their counterparts play a key role in equal measure in the market [39]. They are majorly wholesale and retailing fish at the farm gate or the local or regional market. Gender involvement in processing and consumer taste of the fish product in the market is determined by the processing method. To gain the maximum market share of aquaculture fish and fish products, traders must take into account consumer preference [40]. This may vary from one location or region to another based on community structure and cultural orientation. Value addition significantly increases the value of the aquaculture product and thus the economic empowerment of the traders. This nevertheless comes at a cost of the value addition capital, space, and equipment. Even though, the consumer market is still favoring small-scale women traders due to their traditional choice for chilled, fried, sundried, or smoked fish. However, modern climate-smart technologies [14] such as the smoking kiln increase the taste of fish and further, the value-added products such as sausages, balls, pies, burgers, and samosas are likely to increase to market base and thus increased incomes among the value chain women actors.

Gender role in fish transportation

Major factors hindering women from competing with male counterparts in the same industry include poor transport networks, lack of proper shipping equipment, and access to credit facilities. The long distances to the inland markets from the farms coupled with poor transport infrastructure make it impossible for fish to reach the markets in a fresh state. Research indicated that women deal with small quantities of fresh fish only due to a lack of specialized fish cooling and transport system or financial limitation to procure systems such as freezers and tracks fitted with the cooling system. Small-scale traders trading on fresh fish prefer to trade at the local market where they deliver the procured aquaculture fish on foot. Any unsold fish is a value-added for the next market day. The role of women is evidently crucial in fish transport, processing, and marketing. In some cases, they are the sole distributors of fish, which means the aquaculture producer is dependent on the woman in converting the fish into money.

Conclusion

The findings demonstrate that women are actively involved in various activities along the aquaculture value chain nodes and much of it is not well documented to inform their contribution to the nation's GDP. Their participation contributes towards the blue economy, food security, improved nutrition, creation of employment opportunities, and income generation. Different industries have devoted themselves not to leaving anyone behind and thus it is fundamental to recognize human dignity as it is in the context of Agenda 2030. In the fisheries and aquaculture sector, the voices of women need to be heard all over the world despite facing constraints over factors of production, control of income, and gender norms. Therefore, there is a need to grant everyone equal access to all factors of production, processing, and trading considering the need to overcome sociocultural norms that disadvantage women in society. This will lead to the realization of their full potential in aquaculture resulting in enhanced production, productivity, processing, trade, and economic growth.

References

1. Kruijssen F, McDougal CL, Van Asseldonk IJM. Gender and aquaculture value chains: A review of key issues and implications for research. Aquaculture. 2018; 493:328-337.
2. Harrison R, Leitch C, McAdam M. Identity work and the development of entrepreneurial leadership: does gender matter? In: T. Nelson, K. Lewis, & C. Henry (Eds.), Global female entrepreneurship handbook. London: Routledge. 2016.
3. Ndanga LZB, Quagrainie KK, Dennis JH. Economically feasible options for increased women participation in Kenyan Aquaculture value chain. Aquaculture. 2013; 415:183-190.
4. Cliffe PT, Akinrotimi OA, Ibemere IF. Promoting women participation in aquaculture as a viable tool for poverty alleviation in the rural areas of Nigeria. Global Approaches to Extension Practice: A Journal of Agricultural Extension. 2011; 7(1): 98-105.
5. Nabayunga S, Matolla G, Shitotte Z, Kawooya KG, Kondowe BN. Gender Roles in the Value Chain of Farmed Tilapia (Oreochromis niloticus) in Kakamega County, Kenya. Africa Environmental Review Journal. 2021; 4:13-27.
6. Githukia CM, Drexler S, Obiero KO, Nyawanda BO, Odhiambo JA, Jesoli JW, Manyala JO. Gender roles and constraints in the aquaculture value chain in Western Kenya. African Journal of Agricultural Research. 2020.
7. Obiero KO, Waidbacher H, Nyawanda BO, Munguti JM, Manyala JO, Kaunda-Arara B. Predicting uptake of aquaculture technologies among smallholder fish farmers in Kenya. Aquaculture International. 2019; 27:1689-1707.
8. Ole-Moiyoi LK. Fishing for answers: can aquaculture transform food security in rural Kenya? PhD Dissertation. Standford University, Stanford, USA. 2017; 163.
9. KMAP, Kenya Market-Led Aquaculture Programme (2016). Gender impact Study Submitted by ETC East Africa to Farm Africa. 24.
10. Chete OB. Gender and agricultural practice in developing countries: Literature review. South Asian Jthenal of Social Studies and Economics. 2019; 5(2):1-11.
11. Kumar G, Engle C, Tucker C. Factors driving aquaculture technology adoption. Journal of World Aquaculture Society 2018; 49:447-476.
12. De Silva DAM. Faces of women in global fishery value chains: Female involvement, impact and importance in the fisheries of developed and developing countries. Food and Agriculture Organization. 2011.
13. Gopal N, Hapke HM, Kusakabe K, Rajaratnam S, Williams MJ. Expanding the horizons for women in fisheries and aquaculture. Gender, Technology and Development. 2020; 24(1): 1-9.
14. FAO. The State of World Fisheries and Aquaculture. Suitability in Action. Rome. 2020. https://doi.org/10.4060/ca9229en
15. FAO. The State of World Fisheries and Aquaculture. Towards Blue Transformation. Rome, FAO. 2022. https://doi.org/10.4060/cc0461en
16. Numtsoe N. Role of women in the development of fisheries & Aquaculture. 2013
17. HLPE. Food losses and waste in the context of sustainable food systems. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security. Rome, Italy 2014.
18. Fonda JA. Role of Women in Freshwater Aquaculture Development in Kenya. Aquatic Ecosystem Health and Management. 2021; 24(1):73-81.
19. Gallant M. Understanding gendered preferences for Climate-Smart Agriculture adoption in Malawi. Major Research Paper submitted in partial fulfilment of the requirements of the Master of Arts in International Development and Globalization. University of Ottawa, Canada. 2019.

Citation: Chepkirui M, Orina PS, Orina T, Githukia C, Ochingo J, et al. (2023) Review on the role of women along the aquaculture value chain in Kenya. Ann Mar Sci 7(1): 021-024. DOI: https://dx.doi.org/10.17352/ams.000034

20. FAO. The state of Food and Agriculture: Women in agriculture: Closing the gender gap for development, Rome, Italy. 2011.

21. Schumacher KP. Gender relations in global agri-food value chains-A review. Erde. 2014.

22. Me-Nsope N, Larkins M. Gender analysis of the pigeon pea value chain: Case study of Malawi. Center Report Series, No. 4. Global Center for Food Systems Innovation, Michigan State University, East Lansing, Michigan, USA. 2015; ISBN: 978-0-9903005-5-7.

23. Aquaculture Business Development Programme (ABDP) (2021) Aquaculture value chain assessment Report in Kenya. Policy and Market Options Limited.

24. Torell E, Castro J, Lazarte A, Bilecki E. Analysis of Gender Role in Philippines Fishing Communities. Journal of International Development. 2021; 33:233–255.

25. Quddus MA, Jui NZ, Rahman KM, Rahman M. Gender role in pond fish culture in terms of decision making and nutrition security. Bangladesh J Agric Econs. 2018. XXXVIII: 1&2 (2016-2017) 55-71.

26. Kleiber D, Harris LM, Vincent ACJ. Gender and marine protected areas: a case study of DanajonBank, Philippines. Maritime Studies. 2018; 17: 163–175.

27. Yap EE, Peralta EM, Napata RP, Espectato LN, Serofia GN. A model for gender-based post-harvest fisheries technology transfer initiatives in the Philippines. Asian Fisheries. 2017; 30S: 145–162.

28. Prieto-Carolino A, Mediodia HJ, Pilapil-Anasco C, Gelvezon RP, Gabunada F. Gendered spaces in abalone fisheries in the Philippines. Asian Fisheries Science. 2016; 29: 1-13.

29. Agbayani RF. Issues and challenges in sustainable fisheries development of the Southeast Asian Region: Aquaculture: Integrating aquaculture in rural development in Southeast Asia. In The Southeast Asian State of Fisheries and Aquaculture. Secretariat, Southeast Asian Fisheries Development Center. 2012.

30. Monfort, MC. The role of women in the seafood industry. In the role of women in the seafood industry, 67. Rome: Food and Agricultural Organization of the United Nations and the Global Research Programme. 2015.

31. Onyango JL. Role and Place of Women in Aquaculture a Case Study of Ukerewe District, Tanzania. International Journal of Aquaculture. 2013; 3:101-104.

32. Kaminski AM, Genschick S, Kefi AS, Kruijssen F. Commercialization and upgrading in the aquaculture value chain in Zambia. Aquaculture. 2018; 493: 355-364.

33. Kizito P, Kimani E, Lodiaga M. Ventures Within Fisheries Value Chain that Men and Women Participate in Nairobi City County, Kenya. Advances in Social Sciences Research Journal. 2017; 4(8).

34. Phillips M, Subasinghe RP, Tran N, Kassam L, Chan CY. Aquaculture big numbers. FAO Fisheries and Aquaculture Technical Paper No. 601. FAO, Rome, Italy. 2016.

35. Okechi JK. Profitability assessment: A case study of African catfish (Clarias gariepinus) farming in the Lake Victoria Basin, Kenya. (Master's thesis, The United Nations University. 2004.

36. Brummett RE, Youaleu JLN, Tiani AM, Kenmegne MM. Women's traditional fishery and alternative aquatic resource livelihood strategies in the Southern Cameroonian Rainforest. Fisheries Management and Ecology. 2010; 17(3): 221-230.

37. Sexsmith KSC, Speller W. How to improve gender equality in agriculture, investment in agriculture policy brief# 5. International Institute for Sustainable Development. 2017.

38. Nayak N. Gender, Globalization and fisheries: The Indian response. Gender, globalization and fisheries workshop. 6-12 May 2000, St. John's NF. 2000.

39. Ikiara MM. Sustainability, livelihoods, production and effort supply in a declining fishery: The case of Kenya's Lake Victoria Fisheries. University of Amsterdam. PhD Thesis. 1999.

40. Lwenya C, Abila R. The Gender role in fish processing and trading practices in Lake Victoria, Kenya. 2000.

Citation: Chepkirui M, Orina PS, Orina T, Githukia C, Ochingo J, et al. (2023) Review on the role of women along the aquaculture value chain in Kenya. Ann Mar Sci 7(1): 021-024. DOI: https://dx.doi.org/10.17352/ams.000034