

MPHTI 04.71.31

JEL Classification: Q56

DOI: <https://doi.org/10.52821/2789-4401-2023-2-20-30>

## GENDER ROLES IN THE FISHERIES OF NORTH ARAL SEA IN KAZAKHSTAN

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### ABSTRACT

*The purpose* of this study is to contribute to the existing research on the Aral Sea from a gender perspective, with a specific focus on women's roles in the fishery sector.

*The methodology* employed in this study involved the use of a semi-structured in-depth interview instrument, which was developed to document the role of women in the fisheries value chain, as well as the challenges and opportunities they face.

*Originality / value of the research.* This article aims to fill the gap in the lack of recognition of women's roles in fisheries in Kazakhstan and start a conversation about gender considerations in the ecologically and economically vulnerable coastal community of Kazakhstan.

*Findings.* The study's findings highlight the prevalent gender roles in the fishery sector in the research area, where men are primarily responsible for catching fish, while women process and add value to it, both at home and in processing plants. However, despite their significant presence in the fish processing industry, women lack representation in fisheries associations. The study also identified pikeperch as a key export-oriented fish and highlighted the potential for women to contribute to farmed fish production. Finally, the study identified women's interest in skills training, particularly in marketing and sales, and recommended that stakeholders in the fishery sector jointly design and organize training programs to facilitate women's access to these skills.

*Keywords:* Aral Sea, fishery, women's roles, environment, gender, sustainable development.

*Acknowledgement:* I express my gratitude for the consideration of the USAID Water Resources Project in connection with the involvement and financial support in the framework of the competition for young scientists.

### INTRODUCTION

The international community acknowledges that sustainable development is impossible without participation of women. To sustain the successes of North Aral Sea water recovery and economic benefits for livelihood of local community, it is critical to understand gender-specific aspects of the fisheries.

**Literature review.** The industry of fisheries has long been a man's domain whereas woman's contribution has remained underreported and invisible. However, in the late 80s, valuable contributions by women to fisheries economies gained acknowledgment [1]. Women make about 14 % of the people working directly in the fisheries and aquaculture industries worldwide [2] and over 2 million women participate in coastal fisheries globally, contributing 11 % of the global catch from small-scale fisheries, mostly in Asia, Africa, and Oceania [3]. Women make up half of the labor in the world's fisheries [2] where they are primarily in charge of household labor and childcare in addition to taking part in post-harvest labor-intensive work on the shore such as processing while the fish is caught by males in the deep water and sold in the market [4], the majority of the catch caught by women is used to feed their family or is sold locally [5]. Despite the growing attention to gender and fisheries globally, there is lack of recognition of women's roles in the fisheries in Kazakhstan. Thus, this article aims to fill the gap and start the conversation about gender considerations in the case of an ecologically and economically vulnerable coastal community in Kazakhstan. Once the fourth largest lake in the world, the Aral Sea has rapidly dried up, resulting in a 92 % loss in water volume and a more than 20-fold

increase in salt in the lake [6]. Philip Micklin and Nikolay Aladin [7], who have extensively studied this natural disaster argue that as an outcome of unsustainable irrigation practices: «the sea has shriveled into three major residual lakes, two of which are so salty that fish have disappeared. The once thriving fishing fleets have disappeared, too. Former shore towns have collapsed. Vast seabeds lie exposed and dried; winds now blow salts and toxic substances across populated areas, causing significant health problems».

**Research questions.** Although it is unlikely that the Aral Sea will fully recover anytime soon, restoration efforts have been made in the North Aral Sea, also known as the Small Aral Sea, which is situated on the Kazakhstani side. Due to the construction of the 13 km long Kok Aral dam, which was mostly sponsored by the World Bank, the water levels have increased by 2 meters and the salinity level has decreased. This development has significantly increased the ecological and economic impact for the region [6]. The region's socio-economic prospects have considerably expanded as a result of this development, especially the revival of fish. To illustrate, 695 tons of fish comprised a total catch in 2005 while the total yield reached 6,000 tons in 2016 since the dam project was finished [8]. However, there are issues like poaching and overusing of resources because fishermen are driven by short-term commercial rewards (ibid). Thus, this paper aims to contribute to the studies of the Aral Sea from gender perspective with focus on women's roles in the fishery sector. It also identifies entry points on engaging women in sustainable development. Four research questions form the basis of the gender analysis:

- What are the gender roles in the fisheries?
- To what extent do women participate in decision-making and exercise agency?
- What are the prevailing gender norms and social issues that affect how men and women play different roles in the fisheries?
- What are the entry points for women and men to ensure sustainable development of the fishery sector in North Aral Sea?

**Gender equality context in Kazakhstan.** Before moving to the field context, it is important to look at gender equality snapshot of the country. According to the latest Human Development Report, the gender gap in Kazakhstan is narrowing in terms of underlying inequalities in areas such as education and health [9]. However, in politics there is still an unequal representation of women and men. Today in the Parliament of Kazakhstan women make up 22 %; the share of women among civil servants is 10 % [10]. In addition, a significant gender wage gap remains in 2021 it was 21,7 % [11]. At the same time, even with equal employment, women in Kazakhstan, on average, do twice more household work than men.

Kazakhstan has made notable progress in ensuring gender equality in education, more than 50 % of students enrolled at higher education institutions are female [12]. However, gender gaps persist at the decision-making level, in economic opportunities and employment, especially in rural areas. A high number of women are categorized as «self-employed» which implies their involvement in the informal sector. The agriculture sector employment in 2019 was 14,8 % of the population, comprising of 13,2 %, and accounting for 5,03 % of GDP [13]. However, women earn only 77 % of what men earn in the agriculture sector [14]. Moreover, the high percentage of non-active and not-reported status might confirm the high share of older women living in rural areas as well as the prevalence of informal or unpaid work [15].

The country demonstrates an entrenched divide between urban areas and poorer rural areas, making it even more important to invest in natural resource management in rural communities. According to the World Bank, the poverty rate in Kazakhstan decreased from 4,3 % in 2018 to 5,2 % in 2021 [16]. However, poverty rates vary significantly by region, with some areas experiencing higher levels of poverty than others. For example, the poverty rate in the Turkestan region, located in the south of Kazakhstan, was 9,1 % in 2022, which is almost twice of the national average while the capital city Astana had a poverty rate of 2,2 % in 2022 [17]. As World Bank's Senior Economist for Central Asia William Seitz claims, the top 1 % of adults receiving income in Kazakhstan accounted for 15 % of total income in 2021, nearly as much as the poorest half of the population combined. The contrast in wealth inequality is even more stark, with top 1 % accounting for nearly 30 % of the wealth compared to just 5 % for the bottom half of the population combined [18].

**Field sites.** This study focuses on Aralsk district in the Northern Aral Sea of Kyzylorda region. Aralsk city was formerly a fishing port and an important supplier of fish to the neighboring regions. There are 9 fish

processing plants with production capacity of 12,5 thousand tons of fish in the region and 7 of them are located in Aralsk [19]. Their main products are fish fillets, minced fish, frozen fish (perch, bream, roach). Overall, 5 thousand tons are processed, and 3,8 thousand tons of fish products are exported. There are 18 arbitrary delineated fisheries divisions within the North Aral Sea and each of them has its own fishing fleet and at least one accompanying processing facility [8]. Employment here has doubled since the opening of fish processing plants in the first decade of 2000 like Kambala Balyk, Aral Fresh Fish Processing plant, Aral Service Center Factory. According to the data from the Akimat (local governorate), 500 people work in the fish processing plants, of which 100 are women [20]. Figure 1 shows the geographical location of the research area (see figure 1):



Figure 1 – Location of Aralsk

Note – compiled by the author based on World Atlas

## MAIN BODY

**Methods.** The semi-structured in-depth interviews instrument was developed to document the role of women in fisheries value chain, challenges and opportunities. The key informant interview's asked questions to understand how people perceive environmental issues, fisheries management and entry points for women's empowerment. A total of 10 key informant interviews with head of fish research institutes and plants, local community-based organizations, local government extension personnel and other community leaders were conducted online. Table 1 shows the interview instruments used in conducting interviews:

Table 1 – Interview respondents

Instrument	Respondents
Individual interviews	Female fish processors
Key informant interviews	Business owner/enterprise, NGO representatives Research institute
Note – compiled by the author	

Once collected, the interview summaries were analyzed based on four research questions and identified representative quotations and emerging patterns. Secondary data were gathered from peer-reviewed journal

articles, reports from international and local development agencies, from international and national government statistics. The literature review of secondary data provided an overview of the existing knowledge related to gender and fisheries in the Aral Sea.

Analysis of the results used the framework of patriarchal and neoliberal capitalism. Capitalism's strategy has advantaged powerful networks of men after privatization of 1990s as they accumulated capital but also expedited the oppression of women due to the secondary status. And this study in the Northern Aral Sea region has proved to explain this gendered nature of neoliberal capitalism.

**Ethical considerations.** Each respondent was sent an information letter about the study and scope of the interview, including the purpose, risks, benefits and alternatives with the interviewer. All information provided by respondents appeared under anonymous name in this paper. Their interview notes were kept under coded name. Data collected during the study will be retained on a password-protected laptop for 12 months. There were no recordings made during the interviews.

**Results.**

**Participant demographics.** Individual in-depths and key informant interviews included 7 female and 3 male respondents from Aralsk, Kyzylorda and Almaty. The average age is 50. 80 % of the respondents are senior managers from fish plant, fish-related NGOs, fish research institutes. Others are retired fish processors. All respondents were married and had more than 2 children. All respondents attended secondary school, and only half of them attended vocational college or university. Table 2 shows the characteristics of the sample in the research area:

Table 2 – Sample characteristic

Location	Sector	Male Female	Age group (<30; 30-40; 40-50; 50-60; >60)	Respondent role
Aralsk	2 State entities 2 NGOs 3 fish processing plants	6 female 2 male	50-60	6 Leadership 2 Fish processors
Almaty	1 State entity	1 female	50-60	Leadership
Kyzylorda	1 State entity	1 male	40-50	Leadership
Note – compiled by the author				

**Gender roles in the fisheries.** The season for fishing starts from October until May. In December, the water freezes, whereas February and March is the period of standstill. Usually, there is a ban on fishing from May 1 until June 10. The fishery sector provides jobs and income to women in the research area. While official statistics indicate 20 % of employees in the fish processing plants to be women while respondents claim unofficial numbers vary from 40 % to 60 %. The main markets for fish exports are Russian, Germany, Poland and China since recent times. There is a clear gender division of labor and responsibilities characterized by many as 'men catch the fish, women process it' which means women are mostly employed in grassroots activities and are mostly absent in the main fishing activities: «*Fishing used to be an exclusive male's activity. However, women started to get involved in fish processing and marketing in the last 3-4 years, including illegal activities (meaning marketing the fish themselves, not as a company)*» (Anonymous respondent).

One of the reasons for women's involvement in the industry might be the change in the industry itself: previously men would catch, froze and sell. According to the respondent, it is forbidden to sell raw fish now, but finished products. Thus, women's role is in cleaning, washing, drying, filleting, processing, freezing, and smoking. Figure 2 shows the value chain at the fish processing plant with women's and men's roles:

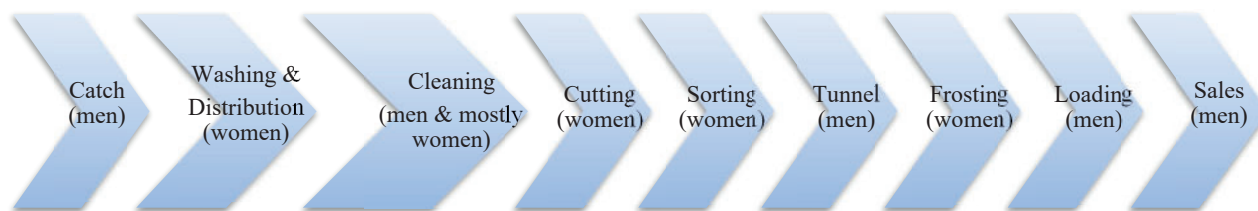


Figure 2 – Distribution of work  
Note – compiled by the author

Women are involved in informal fish value addition and trade but lack marketing skills. Women sell smoked fish on trains that are passing through the research area. It is not clear due to field research limitations, if women who trade the smoked fish process it themselves at home or if they buy it from other local women who smoke the fish. However, at this stage one might argue that men have access to the sales and marketing in formal fish trade, women are involved in informal fish trade.

**Decision making and agency.** Despite the fact that women's processing activities rely on fish, women rarely have access to the fisheries management process [21]. Women are often underrepresented in fisheries associations and local councils, which oversee fisheries. The ability of women to exercise their power and have an impact on regional decision-making processes in the fisheries management has long been a challenge (ibid).

This is true in the case of North Aral Sea where women lack representation and agency in associations, businesses and decision-making. In the Aralsk district, there is one female Member of Parliament, two female members at the Committee of Water Resources (out of 10), two female members at the Public Council (out of 10). All respondents mentioned the limited role of women in the fishery associations and limited role of associations per se. As an example, the local fisheries consortium consists only of male member. The same pattern refers to the management composition of fish processing plants with prevailing number of men in leadership position: «*Men are the top managers in fish processing plants. There is one smaller fish processing plant that is officially led by woman on the paper, but not in practice*» (Anonymous respondent).

To understand the agency issues, one could take a glance at structural and bureaucratic challenges that limit women's access to land ownership in the region. Women own around 5 % of the agricultural land. According to the land distribution data in Kyzylorda region, 727 women (4.5 % of 16,007 total landowners) own 143 ha or 5 % of total land area [22]. For example, a female coastal enterprise owner has been facing land ownership formalization hurdles; likewise, another female respondent has been trying to annex the wetlands to the state entity's territory (where she works) for several years due to bureaucratic issues. Moreover, women are often unaware of their land rights and do not have appropriate qualification and management skills to fill out documents and procedures to apply for credits or government support [23].

**Dominant gender norms and social issues.** Traditional roles are prevalent in the research area where woman is seen as a wife and a mother first. This social construct is amplified by female un/under-employment in the rural villages. In Kyzylorda region the official unemployment rate is 4.9 % among women and 4.8 % among men [24]. Women traditionally work in the sectors like education, accountancy and HR in local organizations. According to the statistics of the local municipality in 2020, around 50 % of the economically active population in the project area was self-employed [24]. The number of registered farm employees is low: 658 out of 31,808 total employed people in Aralsk district (2 %, 43 % of which are female) [24]. Female unemployment in the area is one of the main issues highlighted by the respondents, which seems to be higher than the official numbers: «*Around 70 % of women do not have jobs*» (Anonymous respondent).

In addition, lack of social and medical services is an additional challenge for women (Although it was hard to find the childcare and healthcare services in Aralsk district in national statistics and other official sources, it was possible to find 4 main hospitals in Kyzylorda region, including 1 in Aralsk, 2 in Kazalinsk (135 km from Aralsk) and 1 in Zhalagash (365 km from Aralsk) in local directories. In the map search, 3 kindergartens were identified in Aralsk): «*There are no kindergartens in the village, as a result women cannot work. It is*

*especially difficult for pregnant women, because they have to drive through several villages to the city in case of delivery»* (Anonymous respondent).

Moreover, gender stereotypes take place in the fish research entities, 50 % of the staff are women. Women are involved in hydrobiology in laboratory, secretarial and accountancy positions while men are involved in the expeditions, because it is considered hard for women. If a woman gets to work with men, she has to prove herself to male colleagues: *«She was working all nights when she was a director and hasn't seen her family. She worked hard to prove men that a woman can do fish business»* (Anonymous respondent).

**Entry points for sustainable development of the fisheries.** A lack of environmental awareness among the population leads to ineffective use of water and natural resources. All respondents acknowledged the success of the Aral Sea restoration project. However, women are worried that a lack of understanding and unsustainable use of natural resources can lead to a loss of these achievements as well as hinder future success. As an example, some farm households use drinking water for irrigation purposes, which then leads to drinking water shortages. Another example is overfishing of pikeperch that might lead to the decline in fish population, hence decline in fish processing and export industry that heavily depends on these species. Moreover, illegal fishing operations place fish populations and wildlife at risk. Women are at the forefront of water use for household consumption, they care about future generations and will make strong ambassadors for sustainable water use: *«People do not understand how important it is to save what we have now. They only think about today»* (Anonymous respondent).

Indirect estimates show that actual catch, including poaching, amateur, unaccounted for, currently exceeds the official figure. As in other countries, in Kazakhstan there is the so-called NNN catch (illegal, unaccounted for and unregulated), and this is one of the main problems of the industry. In this regard, pikeperch as a key export-oriented fish has a window of opportunity for women to be involved in farmed fish production. There is a high demand for pikeperch. However, the population has decreased due to overfishing. Thus, regulatory measures need to be explored more and specific actions taken. Thus, cultivation of pikeperch in ponds can solve not only the decreasing fish population issue, but also create jobs for women and develop fish farming practices when aquaculture technologies are introduced: *«Women are more sensitive to the nature. They should be involved more in fish farming, in the process of fish cultivating. Women are also more detailed and follow the rule which makes them good for the fish intake at the fish processing places. They follow the requirements for the standards better than men»* (Anonymous respondent).

Another opportunity is fishmeal production, which has a potential to create female jobs. There is currently only one place that specializes in fishmeal production, in Bogen village; other fishmeal producers are in Kapchagay (Almaty). Thus, the fingerling production expansion depends on the development of the fishmeal production in the research area. Also, there is a growing local demand for fish products like smoked fish, spawn, fish eggs, minced fish, and carp fillet. An expansion of value addition and aquaculture would create new job opportunities, including for women.

Finally, fish processing plants face a lack of specialists in fish processing, in particular fillet cutting, therefore skills training for female and male processing staff is crucial. There is only one technical vocational college that prepares specialists in Aralsk, but they currently do not offer adult training programs. Commercial plants have to train new employees onsite because there are no trainings available. Local NGOs seem to play the role of the extension services. Most of the workshops are provided by NGOs when funding is available from donors. Capacity building for women should focus on sales and marketing in line with technical skills like fillet cutting to improve their access to markets: *«Some male retailers/intermediaries can fool around female trader if she doesn't know the standards and cannot negotiate»* (Anonymous respondent).

Cooperation with regional and national universities to raise awareness about sustainable development and engage them in the local initiatives could bring benefits in long-term perspective. In Kazakhstan, KAZNU and Agrarian University provide programs for fisheries. In Kyzylroda region, Korkyt Ata State University is the major educational institution, which could be considered as a main educational partner for fishery communities in Aralsk.

**Discussion.** The contributions by women to the fisheries in the North Aral Sea represented here aims to bring attention and visibility to women in fisheries in Kazakhstan. Most of the research on fisheries and gender

has focused on Asia, Europe, Latin America, Africa, and Oceania. This research is a first attempt to build a qualitative glimpse of women's roles in the fisheries of Kazakhstan, drawing together existing studies on the Aral Sea, and the knowledge of local fishery community members to highlight the contributions of women. While acknowledging the limitations of the sampling, I present these results to invite feedback from experts, researchers and policy makers as a motivation to start discussion on gender aspects of the fisheries in Kazakhstan. Given the lack of sex-disaggregated data on types of fishing activities by women and men, it is hard to make more accurate estimates and build the holistic value chain.

Nevertheless, this study indicates that both women and men participate in value chain based on clear gender segregation of labor where men have more access to the resources while women are mostly in secondary roles in post-harvest domain. Also, it is seen that women carry household and childcare labor to addition to their fishery activities. Moreover, social issues like unemployment and unavailability of childcare and healthcare services amplify the vulnerability of the community in the North Aral Sea. This brings us to the discussion of the findings within the neoliberal capitalism. When we talk about sustainable growth, we can refer to the concept of inclusive development, which focuses on social and ecological aspect [25] and its crucial for regions like the Aral Sea. Paradoxically, neoliberal capitalism is not inclusive in gender terms and is not suitable for inclusive development. Even the widely accepted definition of sustainable development today may not be «truly sustainable» or «actually inclusive». Gupta and Vegeling well-illustrate it: *«achieving sustainable development has been hampered by trade-offs in favour of economic growth over social well-being and ecological viability, which may also affect the sustainable development goals (SDGs) adopted by the member states of the United Nations. In contrast, the concept of inclusive development emphasizes the social, ecological and political dimensions of development»* [25].

Moreover, the concept of equal opportunity cannot be put in praxis in the neoliberal society, where education and healthcare are to make profit. Together with this fact, neoliberalism is also characterized by feminization of poverty [26]. In some ways, the emergence of neoliberal capitalism intensified gender inequality and had a detrimental impact on the advancement of women's rights. Women are more likely to be exploited in low-paying, socially unprestigious positions because of the decrease or even abolition of many social programs that were once available to everyone, including health care and education. The reality of women's rights following neoliberal reforms in Kazakhstan and other post-socialist nations, where women formally achieved gender equality, is that women still experience gendered occupational segregation in the workplace, a gendered wage gap, «glass ceilings», an excess of part-time and low-wage workers, and the double burden of caring for both children and the elderly, as it can be seen in the case of the Aral Sea women. However, windows of opportunities, like investing in fish farming, fish meal production and skills for women and men could give hope for sustainable growth, or at least maintenance of the successful restoration of the North Aral Sea.

## CONCLUSION

Gender analysis presented in this paper aimed at identifying gender roles, access to decision-making and agency, gender norms and opportunities to ensure sustainable fisheries growth. To start with, typical gender roles in the fishery sector - men catch the fish, and women process it and add value, both at home and in a number of processing plants in the research area. Secondly, women lack representation in the fisheries associations exist in the area. Thirdly, women, who are engaged in the fisheries, carry double burden of household and childcare on top of absence of social and healthcare services. Finally, women have potential in farmed fish production and fishmeal production, and skills training in sales and marketing.

For policy makers and donors, who work on the matter of the Aral Sea, it is crucial to ensure involvement of and equal benefits to women in the restoration of the fisheries industry, improve female representation in fisheries associations, support female fish farmers with funding and technologies in pikeperch rearing, involve women in fish research projects and raise environmental awareness of women and men regarding sustainable fisheries.

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## ҚАЗАҚСТАНДАҒЫ СОЛТҮСТІК АРАЛ ТЕҢІЗІНДЕГІ БАЛЫҚ ШАРУАШЫЛЫҒЫНДАҒЫ ГЕНДЕРЛІК РӨЛДЕР

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### АҢДАТПА

*Бұл зерттеудің мақсаты* – балық шаруашылығындағы әйелдердің рөліне назар аудара отырып, гендерлік тұрғыдан Арал теңізін зерттеуге үлес қосу.

*Зерттеу әдістемесі* балық шаруашылығының құндық тізбегіндегі әйелдердің рөлін және олар кездесетін қиындықтар мен мүмкіндіктерді құжаттауға арналған жартылай құрылымдық тереңдетілген сұхбатты пайдалануға негізделген.

*Зерттеудің бірегейлігі / құндылығы.* Бұл мақала Орталық Азиядағы балық өнеркәсібіндегі әйелдердің рөлін мойындаудағы олқылықтың орнын толтыруға және Қазақстанның экологиялық және экономикалық тұрғыдан осал жағалау қауымдастығында гендер туралы пікірталас бастауға бағытталған.

*Зерттеу нәтижелері* зерттеу аймағындағы балық өнеркәсібіндегі кең таралған гендерлік рөлдерді көрсетеді, мұнда ерлер балық аулауға бірінші кезекте жауапты, ал әйелдер үйде де, қайта өңдеу зауыттарында да өңдеуге және құнды қосуға қатысады. Алайда, балық өңдеу өнеркәсібінде әйелдердің айтарлықтай қатысуына қарамастан, олардың балық бірлестіктерінде өкілдіктері жоқ. Зерттеу сонымен қатар алабұғаны негізгі экспорттық балық ретінде анықтады және балық өсірудегі әйелдердің әлеуетін атап өтті. Соңында, зерттеу әйелдердің оқытуға, әсіресе маркетинг пен сатуға деген қызығушылығын анықтады және балық өнеркәсібіндегі мүдделі тараптарға әйелдердің осы дағдыларға қол жеткізуін жеңілдету үшін оқыту бағдарламаларын бірлесіп әзірлеу және ұйымдастыру ұсынылды.

*Түйін сөздер:* Арал теңізі, балық шаруашылығы, әйел рөлі, қоршаған орта, гендер, тұрақты даму.

*Алғыс:* Жас ғалымдарға арналған байқау аясында техникалық және қаржылық қолдау көрсеткені үшін USAID-тің Аймақтық су және қоршаған орта жобасына алғысымды білдіремін.

**ГЕНДЕРНЫЕ РОЛИ В РЫБОЛОВСТВЕ  
СЕВЕРНОГО АРАЛЬСКОГО МОРЯ В КАЗАХСТАНЕ**

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**АННОТАЦИЯ**

*Цель данного исследования* – внести свой вклад в уже существующие исследования Аральского моря с гендерной перспективы, с упором на роли женщин в рыбной отрасли.

*Методология исследования* основывалась на использовании полуструктурированного глубинного интервью, которое было разработано для документирования роли женщин в цепочке создания стоимости рыбной отрасли, а также проблем и возможностей, с которыми они сталкиваются.

*Оригинальность / ценность исследования.* Данная статья направлена на заполнение пробела в признании роли женщин в рыбной отрасли Центральной Азии и начала дискуссии о гендерных аспектах в экологически и экономически уязвимом прибрежном сообществе Казахстана.

*Результаты исследования* подчеркивают распространенные гендерные роли в рыбной отрасли в районе исследования, где мужчины в основном отвечают за ловлю рыбы, а женщины занимаются ее переработкой и добавлением ценности, как дома, так и на перерабатывающих заводах. Однако, несмотря на значительное присутствие женщин в рыбной перерабатывающей отрасли, они не имеют представительства в рыбных ассоциациях. Исследование также выявило окуня как ключевую экспортную рыбу и подчеркнуло потенциал женщин в разведении рыбы. Наконец, исследование определило интерес женщин к профессиональной подготовке, особенно в маркетинге и продажах, и рекомендовало заинтересованным сторонам в рыбной отрасли совместно разрабатывать и организовывать программы обучения для облегчения доступа женщин к этим навыкам.

*Ключевые слова:* Аральское море, рыболовство, роли женщин, окружающая среда, гендер, устойчивое развитие.

*Благодарность:* Выражаю благодарность региональному проекту USAID по водным ресурсам и окружающей среде за техническую и финансовую поддержку в рамках конкурса молодых ученых

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