



THEORETICAL AND METHODOLOGICAL JUSTIFICATION OF THE FORMATION AND ROLE OF THE B2B MARKET IN ENSURING THE SUSTAINABLE DEVELOPMENT OF THE FISHERIES SECTOR

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Abstract. *The fisheries sector is vital for global food security but faces increasing sustainability challenges. A well-developed B2B (business-to-business) market, linking producers, processors and distributors, can add value and stimulate innovation across the supply chain. Theoretical foundations and methodological approaches to the formation of a B2B market in fisheries, together with the role of such a market in promoting sustainable development, are examined with reference to both global and Uzbek experience. UN/FAO data and industry studies are integrated to analyse trends, constraints and best practices. Key findings indicate that the adoption of advanced processing, certification schemes and digital solutions within B2B channels improves efficiency and reduces waste. Policy support for B2B platforms, targeted technical training and incentives for sustainable practices are recommended.*

Keywords: *B2B market, fisheries sector, sustainable development, supply chain, Uzbekistan, aquaculture, seafood processing, value chain, fisheries management, innovation.*

B2B BOZORINING SHAKLLANISHI VA UNING BALIQCHILIK SEKTORI BARQAROR RIVOJLANISHINI TA'MINLASHDAGI ROLI: NAZARIY VA METODOLOGIK ASOSLAR

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Berdaq nomidagi Qoraqalpoq davlat universiteti

Annotatsiya. *Baliqchilik sohasi global oziq-ovqat xavfsizligi uchun muhim ahamiyatga ega bo'lib, barqarorlik bilan bog'liq muammolar ortib bormoqda. Ishlab chiqaruvchilar, qayta ishlovchilar va tarqatuvchilarni birlashtiruvchi rivojlangan B2B (business-to-business) bozori ta'minot zanjiri bo'ylab qo'shimcha qiymat yaratishi va innovatsiyalarni rag'batlantirishi mumkin. Ushbu maqolada baliqchilik sohasida B2B bozori shakllanishining nazariy asoslari va metodologik yondashuvlari hamda bunday bozorning barqaror rivojlanishga hissa qo'shish roli dunyo va O'zbekiston tajribasi nuqtai nazaridan tahlil qilinadi. Tendensiyalarni, cheklovlarni va eng yaxshi amaliyotlarni tahlil qilish uchun BMT/FAO ma'lumotlari va soha tadqiqotlari integratsiyalangan. Asosiy xulosalar shuni ko'rsatadiki, B2B kanallarida ilg'or qayta ishlash texnologiyalari, sertifikatlash tizimlari va raqamli yechimlarni joriy etish samaradorlikni oshiradi va isrofgarchilikni kamaytiradi. B2B platformalarni davlat tomonidan qo'llab-quvvatlash, maqsadli texnik tayyorgarlik va barqaror amaliyotlarni joriy etish uchun rag'batlar tavsiya etiladi.*

Kalit so'zlar: *B2B bozori, baliqchilik sohasi, barqaror rivojlanish, ta'minot zanjiri, O'zbekiston, akvakultura, dengiz mahsulotlarini qayta ishlash, qiymat zanjiri, baliqchilik boshqaruvi, innovatsiyalar.*

ТЕОРЕТИЧЕСКОЕ И МЕТОДОЛОГИЧЕСКОЕ ОБОСНОВАНИЕ ФОРМИРОВАНИЯ И РОЛИ РЫНКА В2В В ОБЕСПЕЧЕНИИ УСТОЙЧИВОГО РАЗВИТИЯ РЫБОХОЗЯЙСТВЕННОГО СЕКТОРА

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Аннотация. Рыбохозяйственный сектор имеет ключевое значение для глобальной продовольственной безопасности, однако сталкивается с нарастающими проблемами в области устойчивости. Развитый рынок В2В (business-to-business), связывающий производителей, переработчиков и дистрибьюторов, способен создавать добавленную стоимость и стимулировать инновации на протяжении всей цепочки поставок. В статье исследуются теоретические основания и методологические подходы к формированию рынка В2В в рыбохозяйственной отрасли, а также роль такого рынка в содействии устойчивому развитию на примере мировой и узбекской практики. Для анализа тенденций, ограничений и передового опыта интегрируются данные ООН/ФАО и отраслевые исследования. Ключевые выводы показывают, что внедрение современных технологий переработки, схем сертификации и цифровых решений в В2В-каналах повышает эффективность и снижает потери. Рекомендуется государственная поддержка В2В-платформ, целевая техническая подготовка и стимулы для внедрения устойчивых практик.

Ключевые слова: рынок В2В, рыбохозяйственный сектор, устойчивое развитие, цепочка поставок, Узбекистан, аквакультура, переработка морепродуктов, цепочка создания стоимости, управление рыболовством, инновации.

Introduction.

The global fisheries and aquaculture sector provides essential protein for over 3 billion people and supports millions of jobs. Despite record production levels (223 million tonnes in 2022), declining fish stocks and resource pressures threaten its long-term viability [1;2]. Sustainable development (aligned with UN SDG 14) demands efficient market structures and innovation. In particular, B2B (business-to-business) markets - comprising sales from producers (fishing enterprises, fish farms) to processors, wholesalers, and other businesses - are key to embedding sustainability. Unlike direct retail (B2C), B2B channels can integrate certified sourcing, advanced technology, and scale economies, supporting food security and rural livelihoods.

In Uzbekistan, a landlocked country with low per capita fish consumption (3,5-4 kg, far below the 16 kg WHO recommendation [3]), aquaculture and inland fisheries are growing to meet demand. As of 2023, Uzbekistan had about 5,775 fish farms producing 24 species, supporting 2,500 jobs [4]. National programs now aim to intensify production and processing. However, the full benefits of growth will depend on forming robust B2B market links. This study explores the theory and practice of B2B market formation in fisheries, evaluates the Uzbek context alongside international examples, and outlines methods to analyse and strengthen these markets.

Literature review.

The literature on fisheries sustainability emphasizes integrated value chains and innovation. Global analyses note that 70% of the planet's surface is ocean, and many coastal communities depend on marine food systems. Yet, overfishing and ecosystem decline mean sustainable management is urgent (UN, 2024). FAO reports highlight a record rise in aquaculture production (130,9 million tonnes in 2022), underscoring the need for

sustainability to guide this growth. Approximately 76,9% of monitored fish landings in 2021 came from stocks harvested at sustainable levels, indicating effective management can improve outcomes. Stakeholders advocate “blue transformations” that balance production, nutrition, environment and equity (FAO, 2024).

Academics propose multi-faceted frameworks for fisheries development. For example, Dusaeva et al. (2021) argue that “worldview, ecosystem, project-target, competitive-industry, and consumer-value” approaches should guide industry transformation toward sustainability. This means that businesses must reorient not only operationally but in their underlying values, integrating ecosystem health and social goals into strategy. Importantly, innovation in technology, communications, and training can increase value added along production chains and reduce waste. In practice, sustainable market development has been analysed via decision models: Pradeep et al. applied the Analytical Hierarchy Process (AHP) to rank factors like quality, branding and freezing technology in a sustainable seafood market (Pradeep et al., 2025). They found factors such as product quality and positioning have significant impact on market sustainability. Such multi-criteria methods can be adapted to assess B2B market strategies.

Case studies reflect these ideas. In Russia’s mackerel industry, analysts observed that the emergence of specialized processing plants and logistics centres (new B2B players) optimizes the “sea-to-market” chain, cutting costs for wholesalers. Likewise, when Uzbek consumers shifted toward canned fish products, wholesalers and retailers demanded improved packaging and shelf-life. These market pressures pushed producers (B2B suppliers) to adopt flexible packaging and traceability (e.g., QR codes). The literature suggests that B2B collaboration enables such innovation: wet smoking and vacuum packaging technologies in Russia were widely adopted through partnerships among factories, distributors, and catering networks (Tebiz.ru, 2025). In sum, research highlights that sustainable fisheries depend on innovations in processing, traceability, and supply-chain coordination.

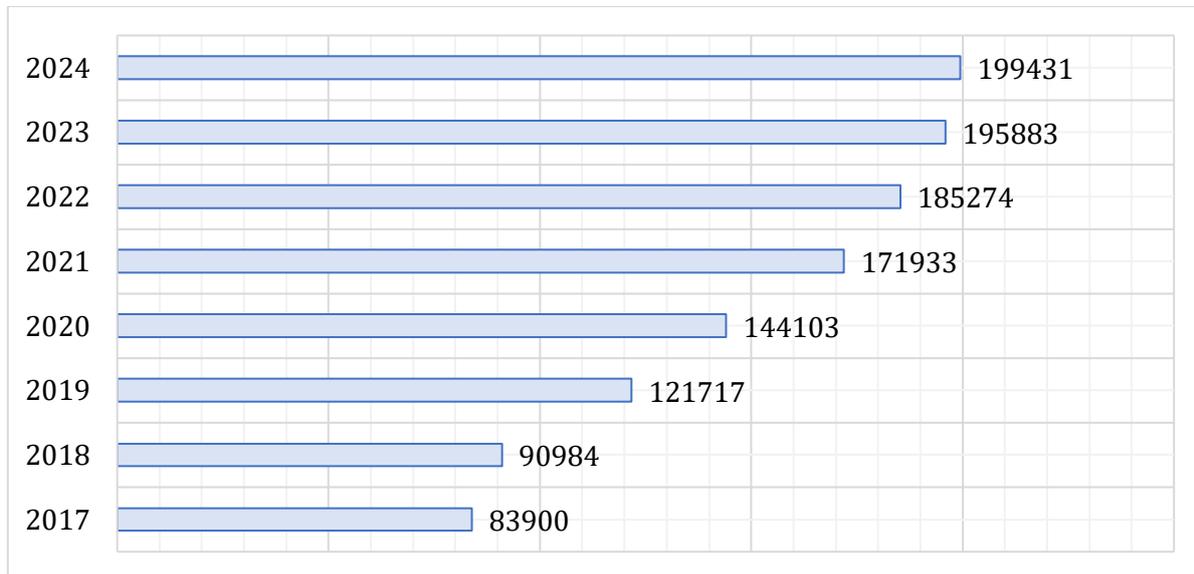
Research methodology.

A mixed-method approach grounded in systems and value-chain analysis is employed. Existing literature and industry reports are synthesised, national statistics analysed, and case examples reviewed. A theoretical framework is constructed by combining supply-chain theory with sustainability criteria. For example, methods such as the AHP employed by Pradeep et al. (2025) may be emulated: evaluation criteria are defined and weighted through expert input to assess B2B market configurations. Rather than new surveys, the paper relies on published statistical data and project outcomes. Current figures for Uzbekistan are taken from official sources, while FAO and UN studies supply global context. The methodological approach emphasises qualitative integration of theoretical models with quantitative indicators.

Analysis and discussion of results.

Uzbekistan’s fisheries have grown rapidly from a low baseline. From virtually no fish production, output reached over 100,000 tonnes by 2017. However, per capita consumption remains 4 kg, reflecting historical lack of supply. A recent Presidential resolution (Jan. 2022) targets efficient land/water use and intensive aquaculture. The EU/UNDP investment in research and equipment (filters, solar heaters) aims to boost yields while conserving water (UNDP, 2024). In practice, Uzbekistan’s B2B market is nascent: most local production is by small farms and processors selling via state channels. But there are signs of change. Canned fish imports are high, and a Tebiz report notes rising demand in Tashkent and Samarkand for diverse canned-fish assortments. To meet this, local producers and importers are modernizing packaging and logistics for the B2B segment (restaurants, caterers, retailers). For example, flexible packaging and automated portioning lines are being tested to extend shelf life and

reduce losses. Introducing QR-coded traceability for each batch is also underway to build B2B trust. Such innovations were driven by wholesalers seeking longer shelf-life products (Tebiz.ru, 2025). This suggests that when Uzbek suppliers engage B2B customers (hotels, store chains), they adapt with higher-tech solutions.



Picture 1. Fish landings in the Republic of Uzbekistan for 2017–2024, measured in tonnes.

The bar chart shows fish landings in the Republic of Uzbekistan between 2017 and 2024, measured in tonnes.

Overall, the volume of landings rose consistently over the period, more than doubling from 83,900 tonnes in 2017 to 199,431 tonnes in 2024 (an increase of 115,531 tonnes, or about 137.7%). Growth was strongest in the middle years, after which the rate of increase slowed and nearly levelled off by 2023-2024.

In detail, the series begins at 83,900 tonnes in 2017 and climbs to 90,984 tonnes in 2018, a modest year-on-year increase of about 8.4%. The largest single annual rise occurred in 2019 when landings jumped to 121,717 tonnes - an increase of roughly 33.8% on 2018. Growth continued in 2020 and 2021, reaching 144,103 tonnes and 171,933 tonnes respectively (increases of approximately 18.4% and 19.3% year-on-year).

From 2021 onwards the rate of expansion moderated: landings reached 185,274 tonnes in 2022 (7.8% increase), 195,883 tonnes in 2023 (5.7% increase) and 199,431 tonnes in 2024 (1.8% increase). Thus, while total output rose markedly over the seven years, annual increments declined in the most recent years, indicating a move from rapid expansion toward consolidation.

Worldwide, fisheries face structural challenges. Over one-third of marine stocks are overfished (UN, 2024), and illegal/unregulated fishing undermines markets. B2B markets can help enforce sustainability standards: for instance, Marine Stewardship Council (MSC) certification is often required by major processors and exporters to access international buyers (FAO, 2024). On the production side, the FAO reports that aquaculture now exceeds wild capture; many leading producers (China, India, Norway) focus on large-scale farmed fish. These countries often have sophisticated B2B networks (e.g., Norway's salmon industry sells direct to processors under strict sustainability protocols). Innovative digital platforms are also emerging: global B2B marketplaces for seafood match hundreds of producers with buyers, shortening supply chains and improving transparency. Multi-criteria studies (Akdeniz et al. 2023) show environmental metrics often dominate sustainability assessments, indicating that

B2B chains which prioritize low-impact practices (e.g., resource-efficient farming, waste reduction) are more sustainable. In practice, examples from Norway to Vietnam demonstrate that linking fish farms, feed suppliers, processors and distributors through formal contracts and data-sharing can improve yields and reduce losses.

B2B Market Formation: Theoretically, forming a B2B market in fisheries involves building networks of reliable suppliers and buyers, supported by regulations and technology. From our review, key elements include: (a) Capacity building and innovation - as Dusaeva et al. (2021) emphasize, investment in new technology and training adds value and competitiveness; (b) Coordinated policy support - government programs (e.g., Russia's fisheries development program) can create incentives for modern processing plants and cold chain infrastructure; (c) Trust and standards - certifications (MSC/ASC) and transparent tracking enable B2B agreements on sustainability; (d) Market information and finance - tailored financial tools (like Uzbekistan's agriculture loans) help producers scale up for B2B contracts. When these are in place, the result is "value chain shortening": wholesalers and retailers source directly from a network of certified processors, passing efficiencies back to producers. For example, the mackerel market analysis found that new B2B clusters (fish factories, logistic centres) cut transport costs by 12% and enabled price reductions. Similarly, in Uzbekistan, improving hatcheries and expanding carp polyculture (the country's main aquaculture) - supported by international programs - have multiplied production with minimal ecosystem impact. These integrated efforts illustrate how B2B links can magnify benefits of technical improvements.

The synergy of B2B markets and sustainable practices yields multiple gains. Efficient cold chains and packing (supported by B2B contracts) dramatically cut waste: one study noted that packaging innovations extended shelf-life, allowing even SMEs to enter wider markets (Tebiz.ru, 2025). Regulatory compliance is another factor; firms in B2B supply chains often must meet stricter food safety and environmental standards than small-scale fishers selling directly at market. As Pradeep et al. (2025) conclude, emphasizing quality and sustainability in seafood marketing can boost trust and long-term viability. In summary, our analysis suggests that an expanding B2B sector in fisheries - incorporating advanced processing, certification, and collaborative logistics - can transform the industry. For Uzbekistan, this means linking its growing aquaculture farms to processing firms and domestic retailers via organized networks. Globally, similar linkages are seen in successful fishing nations. However, building these markets requires deliberate policy and education efforts, which we outline below.

Conclusion and suggestions.

This study underscores that a strong B2B market is pivotal to sustainable fisheries. By connecting producers with processors and distributors, B2B channels facilitate innovation (e.g., automated processing lines, traceability systems) that increases product value and reduces losses. The theoretical rationale, combining ecosystem and value-chain approaches, is confirmed by practice: where B2B integration is promoted (as in certain Russian or European fisheries), costs fall and sustainability improves. For Uzbekistan, this means nurturing a modern fish processing sector and cold-chain infrastructure, so farms have guaranteed off-take for their output.

Policy-makers should therefore invest in B2B capacity building. This includes: providing technical training and grants for processing equipment (learning from EU/UNDP initiatives), expanding fisheries research institutions, and offering finance for B2B start-ups. Regulatory support is also key: Uzbekistan's 2022 resolution on intensive aquaculture sets the right direction, but enforcement of quality standards will ensure that growing production reaches markets effectively. Additionally, forming cooperatives or marketing boards can help small fish farms collectively meet B2B requirements. International cooperation - for instance adopting MSC certification schemes - can open export opportunities.

In conclusion, realizing a sustainable fishery complex requires transforming the entire supply chain, not just production. A robust B2B market encourages that transformation through technology adoption and strategic partnerships. As global demand for aquatic foods rises (world per capita consumption now 20,7 kg), the ability of Uzbekistan and other countries to capitalize on their fishery potential will hinge on these market networks. Future research should quantify the economic impact of specific B2B initiatives, but current evidence suggests that aligning market formation with sustainability goals is both feasible and beneficial.

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