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Short Communication

Oyster aquaculture in Sri Lanka is emerging as a promising industry with considerable potential for sustainable development

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Abstract

Oyster aquaculture in Sri Lanka is emerging as a promising sector with significant potential for sustainable coastal development. Favorable environmental conditions, growing market demand, and low-input farming practices make oyster culture an economically viable livelihood option for coastal communities. The industry also contributes to ecosystem services such as water filtration and habitat enhancement. Strategic policy support, capacity building, and scientific management can further strengthen its long-term sustainability and productivity.

Keywords: Oyster aquaculture; Sustainable development; Coastal livelihoods; Sri Lanka; Marine resources.

Introduction

Oysters are widely recognized as a good nutritious source of protein offering an excellent balance of essential nutrients needed for a healthy diet. They are particularly rich in high-quality protein and glycogen while also supplying vitamins and minerals including zinc, iron, calcium and selenium. This nutrient-dense profile makes oysters a valuable addition to a balanced and wholesome diet [1]. In Sri Lanka, Oyster culture is not yet fully commercialized much of the work is through research institutions. The National Aquatic Resources Research and Development Agency (NARA) is the main body doing applied research on mollusk aquaculture including oyster culture in Sri Lanka. Key oyster species include *Crassostrea madrasensis, C. belcheri* and *Saccostrea cucullata.*

Oyster capture fisheries are mainly concentrated in coastal regions such as Negombo, Chilaw, Kalpitiya, Mannar, Jaffna, Trincomalee and the southern coastal belt in Sri Lanka where they are primarily harvested for local consumption [2]. Although large-scale bivalve farming is not yet a common practice these areas have significant potential for oyster aquaculture. In recent years government-led initiatives have encouraged the development of community-based bivalve farming particularly oyster cultivation also in several parts of the country highlighting its promise as a sustainable livelihood option. When considering challenges and constrains, in the coastal regions where commercial oysters are harvested, untreated urban wastewater frequently enters the lagoons through freshwater streams. This direct discharge of sewage along with poorly managed livestock waste introduces a range of pathogens and pollutants that significantly degrade water quality. Market & consumer demand give low local awareness and acceptance of oysters as food. Limited availability of good quality seed badly effects on difficulties in collecting spat or seedlings, especially on a scale needed for commercial operations. Lack of trained personnel and lack of fully developed hatchery and nursery infrastructure or best practices can be caused

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for the technological problems in the industry. Site selection & environmental factors like Water quality (turbidity, salinity fluctuations) and tidal patterns matter a lot. Moreover when exporting sanitation, disease and food safety can be hurdles.

Figure 01: Harvested oysters in Sri Lanka

The potential benefits significantly outweigh the associated constraints. Oyster farming holds mainly significant economic, environmental and nutritional importance in Sri Lanka. It represents a sustainable, eco-friendly and commercially viable activity that supports both community welfare and environmental health opportunities and potentials illustrate significantly untapped natural resources like many lagoon and coastal areas not yet fully utilized for oyster culture, income & livelihoods could be a supplementary livelihood for fishing and coastal communities, good export potential including sanitary standards and there could be export markets like Singapore and Malaysia [3]. In addition, Government & institutional interest help projects being planned to include oysters in mariculture initiatives suggest policy support may be growing in Sri Lanka [4]. All these enhance consumer confidence in local shellfish products and contribute to the sustainable development of Sri Lanka's coastal aquaculture sector.

Conclusion

In conclusion, oysters offer substantial nutritional, economic, and environmental benefits, making them a valuable resource for sustainable aquaculture development in Sri Lanka. Although oyster culture is presently limited and largely research-driven, the country's extensive coastal and lagoon ecosystems provide strong potential for expansion. Challenges such as water quality issues, limited seed availability, inadequate infrastructure, and low consumer awareness currently hinder commercialization. However, growing government and institutional support, along with community-based initiatives, indicate positive momentum for the sector. With improved hatchery facilities, better management

practices, and market development, oyster farming can emerge as a viable livelihood option and contribute significantly to Sri Lanka's coastal economy and food security.

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