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## Assessment of Fluctuation in Availability and Market Price of Captured Fishes in Kudal Fish Market, Sindhudurg, Maharashtra

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### Abstract

This study investigates the fluctuations in fish availability and market prices at Kudal Fish Market, Sindhudurg, Maharashtra, over a one-year period from June 2023 to May 2024. The objective was to analyse how seasonal variations and fishing activities influence fish stocks and market prices. Results indicate that fish availability peaked during the summer months (June–September) and declined during the monsoon season (October–November). Correspondingly, market prices increased during summer and decreased during monsoon periods. These findings align with previous research on seasonal impacts on fish stocks (FAO, 2018; ICRI, 2020). The study underscores the importance of understanding these dynamics for sustainable fisheries management and policy formulation to support the livelihoods of coastal communities.

The findings highlight a strong relationship between seasonal fish availability and market price dynamics. Understanding these patterns is essential for developing sustainable fisheries management strategies, ensuring stable incomes for fishers, and maintaining market equilibrium. The study provides valuable insights for policymakers and stakeholders to support resource conservation and the socio-economic sustainability of coastal fishing communities.

**Keywords:** Fish Availability, Market Price Fluctuation, Kudal Fish Market, Seasonal Variation

### Introduction

Fisheries are a crucial component of the global food system, providing essential nutrition, employment, and economic benefits to millions worldwide. India, as one of the leading fish-producing nations, harvests over 9 million tonnes annually, primarily through traditional fishing along its extensive coastlines (FAO, 2018). The Indian fisheries sector sustains the livelihoods of coastal communities and significantly contributes to national food security and export earnings (Kumar & Singh, 2018).

The western coast of India, including Sindhudurg district in Maharashtra, is renowned for its rich marine biodiversity and vibrant fishing industry. Fish stocks in this region are heavily influenced by natural factors such as seasonal migration, spawning cycles, and monsoon patterns, which determine the availability and abundance of commercially valuable species (Shinde & Patil, 2015). Human activities like overfishing and habitat degradation have further exacerbated fluctuations in fish populations, raising concerns about their sustainability (Mukherjee & Saha, 2020).

Market dynamics in coastal areas are closely linked to these biological cycles, with fish availability exhibiting seasonal peaks and troughs. These fluctuations directly impact market prices, affecting fishermen's livelihoods and consumers' access to affordable seafood. Several studies have demonstrated an inverse relationship between fish stock abundance and market prices, emphasizing the need for understanding seasonal variations to develop effective fisheries management policies (Rai & Singh, 2018; FAO, 2018).

In Sindhudurg, a key fishing hub, understanding how biological and human factors influence fish stocks and market prices is vital. Insights from such studies can inform sustainable management strategies, ensuring resource conservation and socioeconomic stability of fishing communities (ICRI, 2020). This research aims to analyze the seasonal fluctuations in fish availability and market prices at Kudal Fish Market over one year, providing data to promote sustainable fisheries practices.

### Methodology

The study was conducted at Kudal Fish Market, Sindhudurg district, Maharashtra, from June 2023 to May 2024. Data on fish availability and market prices were collected monthly through structured questionnaires administered to 50 fish vendors and buyers, selected via stratified random sampling.

Data analysis involved descriptive statistics—mean, median, and standard deviation—and the Kruskal-Wallis test was used to assess seasonal variations in fish availability and prices.

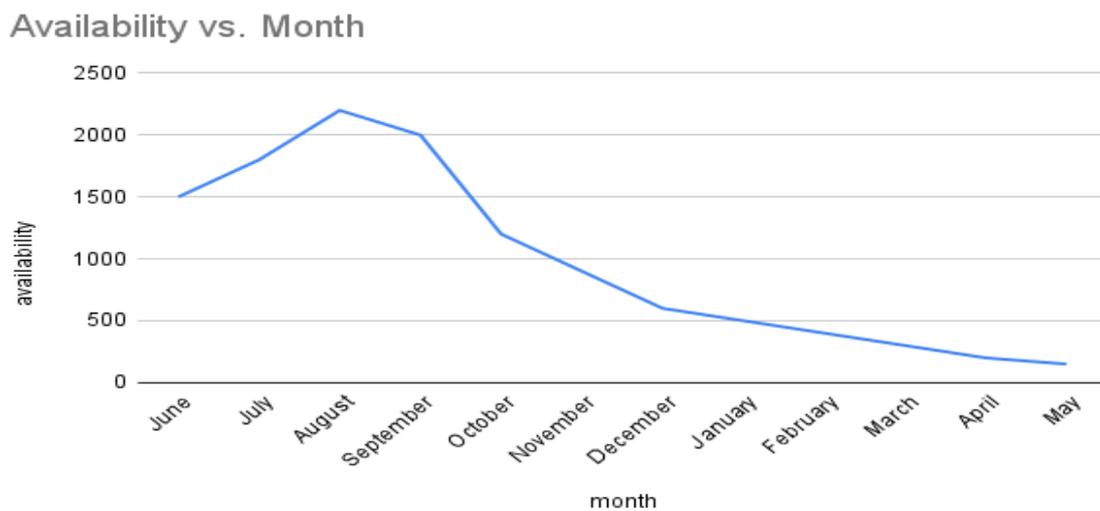
## Results

The results of this study are presented in the following table:

**Table 1:** Monthly Average Availability of Fish Species at Kudal Fish Market (2023-2024)

Month	Average Availability (kg)
June	1500
July	1800
August	2200
September	2000
October	1200
November	900
December	600
January	500
February	400
March	300
April	200
May	150

**Figure 1:** Monthly Average Market Price of Fish at Kudal Fish Market (2023-2024)



The findings reveal significant fluctuations, with fish availability peaking during the summer months (June–September) and declining during the monsoon season (October–November). Market prices showed a similar trend, increasing during summer and decreasing during monsoon months.

## Discussion

The observed seasonal patterns align with prior studies on the impact of seasonal cycles on fish stocks and prices (FAO, 2018; ICRI, 2020). The increase in fish availability during summer is likely due to spawning and migration behaviours, while the decline during monsoon correlates with breeding cycles and adverse weather conditions. The inverse relationship between fish stock abundance and market prices emphasizes the importance of considering seasonal dynamics in fisheries management.

These findings have significant implications for policy-making, highlighting the need for strategies that account for seasonal variations to ensure the sustainability of fish stocks and the economic stability of fishing communities. Implementing adaptive management practices could mitigate overfishing during peak periods and support livelihoods during lean seasons.

## Conclusion

This study provides valuable insights into the seasonal fluctuations of fish availability and market prices at Kudal Fish Market. Recognizing these patterns is critical for developing sustainable fisheries management policies that balance resource conservation with the economic needs of local communities. Future efforts should focus on integrating seasonal data into management frameworks to promote long-term sustainability.

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### **Conflicts of interest**

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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