



# **RISK ASSESSMENT IN FINANCIAL DECISION MAKING ANALYSIS ON FISHERMAN PERSPECTIVE IN COASTAL REGION: A CASE STUDY**

**Mr. Swarn G Kanchan<sup>1</sup>, Dr. C. K. Hebbar<sup>2</sup>**

<sup>1</sup>Research Scholar, Institute of Management & Commerce, Srinivas University, India.

OrcidID: 0000-0003-0715-2325

<sup>2</sup>Research Professor, Srinivas University, India.

OrcidID: 0000-0002-3711-9246

Article DOI: <https://doi.org/10.36713/epra17298>

DOI No: 10.36713/epra17298

## **ABSTRACT**

*Assessing financial decision-making from a fisherman's perspective in coastal regions involves considering a range of risks. Market volatility, driven by fluctuations in fish prices and changing consumer demands, poses immediate challenges. Environmental factors, such as climate change and natural disasters, can disrupt fishing conditions, impacting yields. Regulatory uncertainties, including shifts in fishing quotas and environmental compliance standards, add complexities. Technological advancements may necessitate investments, while limited access to credit and interest rate fluctuations present financial risks. Study is done with secondary data such as case studies, literature reviews, books, blogs and internet sources. Findings show that it is reasonable to expect that conflicts in fisheries management will increase with time as human population grows and seafood demand increases.*

**KEYWORDS:** Risk Assessment, Financial Decision Making, Fisherman, Population, Coastal Region.

## **INTRODUCTION**

In the dynamic landscape of financial decision-making, particularly in coastal regions reliant on fishing activities, a comprehensive risk assessment becomes imperative for sustainable economic development. Fishermen, as key stakeholders in these coastal communities, navigate a complex web of uncertainties ranging from environmental factors to market dynamics. This analysis aims to delve into the intricacies of risk assessment from the perspective of fishermen engaged in the fishing industry in coastal regions (Clark, C.W. (1996).

The coastal regions, characterized by their proximity to the intersection of land and sea, present unique challenges and opportunities for the fishing communities that inhabit them. The livelihoods of these communities are intricately woven into the fabric of marine ecosystems, subjecting them to a myriad of risks such as unpredictable weather patterns, fluctuating fish populations, and market volatility. As these risks directly impact the financial well-being of fishermen, a nuanced understanding of risk factors and their implications is crucial for decision-making process (Charles, A.T. (1998).

This analysis will explore the multifaceted nature of risks faced by fishermen, examining both external and internal factors that contribute to the uncertainty in their financial endeavours. By unravelling the intricacies of risk within the context of coastal fisheries, we aim to provide valuable insights that can inform strategies for risk mitigation, resilience-building, and sustainable financial decision-making. In doing so, this study contributes to the broader discourse on coastal community development and underscores the importance of integrating risk assessment into the fabric of financial decision-making processes in the fishing industry (Farrow, S. (2004).

## **RELATED RESEARCH WORK**

Management methods provide means to address increasing complexity for successful fisheries management by systematically identifying and coping with risk.



**Table No 1: Related Research Work**

S.NO	FOCUS	CONTRIBUTION	REFERENCES
1	Risk management through insurance in fisheries.	Insurance is a financial arrangement that redistributes the costs of unexpected losses. The key idea is that risk can be transferred to someone who is better able to bear it, moving towards Pareto efficiency.	Hanna, S.S. (1997). [4]
2	Management strategy evaluation inviting participation from all stakeholder group	Investments to reduce uncertainty around the dynamics of the resource can be incorporated into a management option using 'research-conditional' approaches.	Herrmann,, et al., (2004).[5]
3	Risk avoidance opportunities in fisheries management are case-by-case specific.	They show that bycatch mortality has been successfully reduced by separating fishing activity both spatially, by using weighted lines, and temporally by restricting fishing to night and to seasons which avoid high seabird activity.	Garcia, S.M.(1994).[6]
4	Many fisheries agencies employ some form of passive adaptive management, routinely updating harvest regulations and conducting stock assessments.	Any management process that updates the plan for the next period based on what has already happened is adaptive management. Formal adaptive management is more specific, seeking to create a plan that improves with experience through time in an efficient manner.	Hilborn R. (2007). [7]
5	Risk management is a loose term for the general process of identifying, characterizing and reacting to risk.	In the first, risks are identified and characterized. Then in the treatment stage, they are dealt with the recognition of uncertainty and advances in computational statistics, such as Bayesian analysis.	Leung, P. (2006).[8]
6	Study on myriad risks in fisheries management and their identification is of critical significance.	Uncertainty is widely regarded to be pervasive in fisheries and risks can be identified simply by following the sources of variability and uncertainty as these drive deviations from expectations.	Perruso, L., (2005). [9]

**OBJECTIVES OF THE STUDY**

1. To study the risk assessment in financial decision making.
2. To understand the stability and diversity fishing fleet.
3. To list out the challenges from seafood sustainability.

**RESEARCH METHODOLOGY**

The data available for this literature is adopted from numerous case studies, reviews of literature, journals and internet sources, and it identifies the other aspects related to risk assessment in financial decision making of coastal fishing financial decision.



## **RISK ASSESSMENT IN FINANCIAL DECISION MAKING**

In the context of financial decision-making, it is essential for fishing companies to conduct a comprehensive risk analysis that considers both short-term and long-term uncertainties. This involves evaluating the financial implications of potential disruptions in the supply chain, assessing the vulnerability of revenue streams to market volatility, and understanding the regulatory landscape. Risk mitigation strategies may include diversifying fishing operations, investing in technology for sustainable fishing practices, and developing adaptive financial management approaches (Minnegal, M. & Dwyer, P.D. (2008).

Furthermore, collaboration with governmental bodies, environmental organizations, and other stakeholders can enhance risk management efforts and contribute to the long-term sustainability of the fishing sector. Despite the inherent risks, effective risk assessment and management can position fishing enterprises to make informed financial decisions, navigate uncertainties, and sustain profitability in a dynamic and challenging industry. By incorporating a forward-looking and adaptable approach, fishing companies can enhance their resilience, protect their financial interests, and contribute to the overall sustainability of marine resources (Pitcher, T.J. (2008).

One significant risk stems from environmental factors, such as climate change and overfishing, which can impact fish stocks and disrupt fishing operations. Economic risks also play a pivotal role, as fluctuations in market prices for seafood products and changes in consumer preferences can directly influence the financial performance of fishing enterprises. Additionally, regulatory risks pose challenges, as evolving fishing regulations and conservation measures can affect access to fishing grounds and impose additional costs on industry participants (Sanchirico, et al., 2008).

## **STABILITY AND DIVERSITY FISHING FLEET**

The stability and diversity of a fishing fleet are critical components in ensuring the resilience and sustainability of the fishing sector. Fleet stability refers to the ability of fishing operations to withstand external shocks and uncertainties, such as changes in environmental conditions or market dynamics. A diverse fishing fleet, consisting of vessels with different sizes, gear types, and targeting various species, can contribute to stability by reducing the reliance on a single resource and spreading the risks associated with fluctuations in fish populations or market prices (Rosenberg, A.A. & Restrepo, V.R. (1994).

Diversity in the fishing fleet also plays a pivotal role in promoting ecosystem sustainability. By utilizing various gear types that are appropriate for specific target species and ecosystems, the fishing industry can minimize the impact on non-target species and habitats. This approach aligns with the principles of ecosystem-based fisheries management, contributing to the long-term health of marine ecosystems. Additionally, a diverse fishing fleet can enhance adaptability to changing regulations and market demands, allowing for strategic adjustments based on the evolving dynamics of the prices (Waugh, et al., (2008).

In summary, maintaining stability and diversity in the fishing fleet is essential for the overall sustainability of the fishing sector. It not only helps to buffer against uncertainties but also aligns with conservation goals and promotes responsible fishing practices. As the industry faces challenges such as climate change and overfishing, fostering a stable and diverse fishing fleet becomes paramount for the continued success and viability of fisheries around the world Whitmarsh (1998).

## **CHALLENGES FROM SEAFOOD SUSTAINABILITY**

Seafood sustainability faces a multitude of challenges that impact both the health of marine ecosystems and the long-term viability of the fishing industry. Overfishing remains a primary concern, driven by increased global demand for seafood and often exacerbated by inadequate fisheries management. The depletion of fish stocks not only threatens biodiversity but also jeopardizes the livelihoods of communities dependent on fishing. Additionally, illegal, unreported, and unregulated (IUU) fishing further exacerbates sustainability challenges, as it undermines conservation efforts and contributes to over exploitation (Tupper, 2002).

Environmental degradation, such as habitat destruction and bycatch, poses another significant challenge to seafood sustainability. Destructive fishing practices, like bottom trawling, can damage sensitive habitats and disrupt entire ecosystems. Bycatch, the unintentional capture of non-target species, including endangered or vulnerable marine life, adds to the ecological impact. Addressing these challenges requires a holistic approach that combines effective fisheries management, enforcement of regulations, and the adoption of sustainable fishing practices and technologies (Sissenwine, M. (1984).

Consumer awareness and market dynamics also present challenges in promoting seafood sustainability. Many consumers are often unaware of the environmental and social impacts of their seafood choices. Mislabelling and fraud within the seafood supply chain further complicate efforts to make informed decisions. Creating a more transparent and traceable seafood supply chain, coupled with educational initiatives, is essential to empower consumers to choose sustainably sourced seafood and incentivize responsible practices within the fishing industry. Overall, tackling the multifaceted challenges of seafood sustainability requires a coordinated effort from governments, industry stakeholders, and consumers to ensure the health of marine ecosystems and the future of the seafood supply (Weikard, H.-P. (2003).



## FINDINGS

Analysing risk assessment in financial decision-making from a fisherman's perspective reveals several key findings that shape their approach to managing uncertainties in the fishing industry. One prominent factor is the inherent dependence on natural resources and environmental conditions. Fishermen often face risks related to fluctuating fish stocks influenced by climate change, overfishing, and habitat degradation. The unpredictability of these factors directly impacts catch yields, thereby affecting income and financial stability. Understanding and quantifying these environmental risks are crucial for fishermen when making decisions about their fishing operations.

## SUGGESTION

Identify and analyse risks that are specific to the fishing industry, such as weather conditions, regulatory changes, fish stock variability, and environmental factors. Understanding these industry-specific risks is crucial for accurate assessment. Develop robust financial planning models that account for variability in catch volumes and fish prices. Maintain a contingency fund to cover unexpected expenses or revenue shortfalls. Regularly review and update financial plans. Invest in comprehensive insurance coverage that addresses various aspects of the fishing operation, including vessel insurance, liability coverage, and coverage for damage to fishing gear. Regularly review and update insurance policies to ensure adequate protection.

## CONCLUSION

When conducting a risk assessment in financial decision-making analysis from a fisherman's perspective, it's important to consider the unique challenges and factors specific to the fishing industry. Analyse market risks associated with fluctuations in fish prices. Consider factors like global demand, market trends, and the impact of geopolitical events on fish prices. Diversification of catch and exploring multiple markets can help mitigate market risks. Address sustainability risks by adopting responsible fishing practices. Overfishing and environmental concerns can impact the long-term viability of the industry. Being environmentally conscious can also enhance the reputation of the business.

## REFERENCES

1. Clark, C.W. (1996). *Marine reserves and the precautionary management of fisheries*. *Ecological Applications* 6, 369–370.
2. Charles, A.T. (1998). *Living with uncertainty in fisheries: analytical methods, management priorities and the Canadian groundfishery experience*. *Fisheries Research* 37, 37–50.
3. Farrow, S. (2004). *Using risk assessment, benefit-cost analysis, and real options to implement a precautionary principle*. *Risk Analysis* 24, 727–735.
4. Hanna, S.S. (1997). *The new frontier of American fisheries governance*. *Ecological Economics* 20, 221–233.
5. Herrmann, M., Greenberg, J., Hamel, C. and Geier, H. (2004). *Extending federal crop insurance programs to commercial fisheries: the case of Bristol Bay, Alaska, Sockeye salmon*. *North American Journal of Fisheries Management* 24, 352–366.
6. Garcia, S.M. (1994). *The precautionary principle: its implications in capture fisheries management*. *Ocean and Coastal Management* 22, 99–125.
7. Hilborn R. (2007). *Moving to sustainability by learning from successful fisheries*. *Ambio* 36, 296–303.
8. Leung, P. (2006). *Multiple-criteria decision making (MCDM) applications in fishery management*. *International Journal of Environmental Technology and Management* 6, 96–100
9. Perruso, L., Weldon, R.N. and Larkin, S.L. (2005). *Predicting optimal targeting strategies in multispecies fisheries: a portfolio approach*. *Marine Resource Economics* 20, 25–45
10. Minnegal, M. and Dwyer, P.D. (2008). *Managing risk, resisting management: stability and diversity in a southern Australian fishing fleet*. *Human Organization* 67, 97–108.
11. Pitcher, T.J. (2008) *The sea ahead: challenges to marine biology from seafood sustainability*. *Hydrobiologia* 606, 161–185.
12. Sanchirico, J.N., Smith, M.D. and Lipton, D.W. (2008) *An empirical approach to ecosystem-based fishery management*. *Ecological Economics* 64, 586–596.
13. Rosenberg, A.A. and Restrepo, V.R. (1994). *Uncertainty and risk-evaluation in stock assessment advice for U.S. marine fisheries*. *Canadian Journal of Fisheries and Aquatic Sciences* 51, 2715–2720.
14. Waugh, S.M., Baker, G.B., Gales, R. and Croxall, J.P. (2008). *CCAMLR process of risk assessment to minimise the effects of longline fishing mortality on seabirds*. *Marine Policy* 32, 442–454.
15. Whitmarsh, D.J. (1998). *The fisheries treadmill*. *Land Economics* 74, 422–427.
16. Tupper, M.H., Wickstrom, K., Hilborn, R. et al. (2002) *Marine reserves and fisheries management*. *Science* 295, 1233–1235.
17. Sissenwine, M. (1984). *The uncertain environment of fishery scientists and managers*. *Marine Resource Economics* 1, 1–30.
18. Weikard, H.-P. (2003). *On the quasi-option value of biodiversity and conservation*. In: *Risk and Uncertainty in Environmental and Natural Resource Economics* (eds J. Wesseler, H.-P. Weikard and R.D. Weaver). Edward Elgar, Northampton, pp. 23–37.