

A Study Of Issues And Problems of Crab Fishermen In Andaman And Nicobar Islands

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Abstract:

The fishermen are facing some problems or aversive conditions which are resulting into climate change, occupational hazards, lack of education and training. In the present study an in-depth interview has been conducted on more than 450 local fishermen and crab collectors of Andaman and Nicobar region, followed by hypothesis analysis. The results suggest that economic factors, environmental hardships and other miscellaneous factors are creating occupational hazards and they are not getting outputs equal to the inputs they are giving; which is resulting into job shift or leaving the field.

Key words: Environmental hardships, occupational hazards

1. INTRODUCTION

The major constraint faced by the crab farmers in India is the non-availability of stocking materials in sufficient quantity at the appropriate time. Aquatic pollution and environmental problems that arise due to crab culture are negligible under optimum stocking density, when compared to penaeid shrimp culture and hence it is considered as environment friendly venture.

Credit facilities have to be provided for prospective crab farmers to develop their farming activities. The fishermen and local crab collectors should get clear knowledge about the topography of sundarbans region and also knowledge about water bodies.

2. REVIEW OF LITERATURE

1. **A.A. Laithb,, M. Ambaka , A.B. Abol-Munafib , W.W.I.**

Nurhafizaha , M. Najiaha (2017), Isolated compounds from marine invertebrates are being increasingly known to possess various pharmacological activities with which many useful drugs have been developed. Crabs contain bioactive compounds including antibacterial, antifungal and antiviral metabolites, isolated from various tissues and organs that have revolutionized treatment of serious diseases. The present study represents the first attempt to investigate and compare the natural antibacterial properties from whole extract of marine blue swimmer crab, *Portunus pelagicus*, and mud crab, *Scylla tranquebarica*, against fish pathogenic bacteria. Liquid chromatography/mass spectrometry utilizing a time-of-flight (TOF) mass analyser (LC/MS-QTOF) based metabolomics approach was used to characterize the variation in secondary metabolite production in *P. pelagicus* and *S. tranquebarica* crab habitats in Malaysia. Different metabolites are evaluated in both crab species using LC/MS-QTOF. Initially a total of 75 metabolites were identified and only 19 metabolites satisfied the P-Corr cut-off point of less than 0.01 and at least 2-fold change. These metabolites, which contain anti-inflammatory and antibacterial properties, were down regulated in *S. tranquebarica* samples and up regulated in *P. pelagicus* samples. In vitro bioassay of methanolic *P. pelagicus* extracts showed the best antimicrobial response against Gram positive bacteria, *Streptococcus agalactiae*, and Gram negative bacteria, *Vibrio alginolyticus*, *Klebsiella pneumoniae*, and *Escherichia coli*, with a statistically significant difference ($P < 0.05$) of *P. pelagicus* extracts as compared to *S. tranquebarica*. The results indicate that both types of crab extracts are bactericidal at higher concentrations and bacteriostatic at lower concentrations. This manuscript reports the role of marine and mud crabs with specific emphasis on their secondary metabolites, and discusses current and future developments in both the production of desired crab metabolites and their potential uses in pharmaceutical industries.[1]

2. **Jose Josileen, A. P. Dineshbabu, P. T. Sarada, Gyanaranjan Dash, Indira Divipala, Rajan Kumar, Raj Kumar, K. N. Saleela, S. Lakshmi Pillai, Rekha Devi Chakraborty, N. Ragesh, L. Sreesanth, Sindhu K. Augustine¹ and T. V. Sathianandan (2021),** While closely tracking the marine crab fishery of India for the past fifty years, it is evident that the status of this resource is shifting from by-catch to targeted fishery, at least for a few species. The continuous monitoring and studies carried out by ICAR-CMFRI clearly delineate the status of the stocks in different regions. The overall trend of the

fishery showed increase, however, in most of the fishing areas species are less abundant or in the rebuilding state clearly indicating need for ensuring sustainability through proper fisheries management plans. Most of the commercial crabs in India are highly resilient; short-lived and their life span is around 2.5-3 years. These fast growing species breed throughout the year and recorded fairly high fecundity rates. In 2014, Minimum Legal Size (MLS) was implemented for 58 species in Kerala (Mohamed et al., 2014), which included the three major species of crabs reported here. Our landing records showed that the percentage of crabs below MLS was considerably low thereafter. All states/regions should follow regulatory measures concurrently otherwise intended result will not be attained. In the case of these crabs an important measure that can be implemented is the prevention of landing and trade of berried females, which alone can create a positive impact on the fishery. ICAR-CMFRI has recommended Fishery Management Plan (FMP) for a few species in certain maritime states, which were prepared based on the inferences evolved through several years consistent studies. The Fishery management for Palk Bay Blue Swimming Crab (BSC), suggests the rules and regulations to be followed for the BSC fishery in Palk Bay (Josileen et. al, 2019). Collaboration among the stakeholders is required to achieve the objective of sustainability and rejuvenation of the crab fishery resources in India. This may take considerable time depending on the life cycle of the species and prevailing situation of the ecosystem. There is a general notion that solving issues associated with marine fisheries are impractical or a herculean task, considering the complexity of the In spite of this, by following mandatory regulatory measures we can progress through these conditions. Enforcement of rules and regulations by Central and State governments in areas of their respective jurisdiction and adoption of systematic and precautionary approaches by all the stakeholders from fishers to traders is therefore highly desirable.

3. RESEARCH OBJECTIVES

1. To construct the major issues and problems

4. RESEARCH METHODOLOGY

A detailed review of available literature and material has been done to design and develop the questionnaire to achieve the

established objectives of the research. This help to briefly presents an outline of the research process and various research tools adopted to complete the research.

The Study:The study is descriptive in nature; the piece research is trying to find out which issues are considered important by the fishing agencies and other those who are directly or indirectly involved into the process of crab production and their further process to sale it ends users. The study has also undertaken a detailed analysis like comparison of perception of skills among the fisherman belong to different farming places, processors and sellers as well as government institution. For the purpose of study statistical tools used.

Primary Data - A questionnaire survey was conducted for the purpose of the study.

Secondary Data - Secondary data is the data, which already exists. Secondary data was collected mainly through the internet, websites and some are taken from books and articles.

Sampling Design –Purposive sampling method was used.

Sample Size–Target to 500, actual receive 482 filled questionnaires

Statistical tools –Different aspects were measured by using of Likert scale.

5. STATISTICAL ANALYSIS

1. Out of 500 sample size, 482 numbers of respondents were participated, 100% response received for crab fishing environment change time to time.

Table No. 01 - Crab fishing environment change time to time			
S. No	Category	Respondents	Percentage
1	Yes	482	100
2	No	0	0
	Total	482	100.00

Numeric value is the highest for the “yes” and zero response for “No” category.

2. Out of 500 sample size, 482 numbers of respondents were participated for training centre available to train fisherman, out of that 14.9% are in opinion of “Yes” and 85.5% are in opinion of “No”.

Table No. 02 - Training centre available to train fisherman			
S. No	Category	Respondents	Percentage
1	Yes	70	14.5
2	No	412	85.5
	Total	482	100.00
		Z - Test	0.841344746

To test significance of dominating income group, we applied Z – test.

H_{014} : Training centre available to train fisherman

H_{a14} : Training centre not available to train fisherman

Null hypothesis is accepted and alternated hypothesis is rejected, that the training centre available to train fisherman. However, the numeric value is the highest and found significant. It is proved that there is no chance of error.

6. CONCLUSION

During survey, various issues and problems were observed. Major problems were noticed that, crab fishing climate and weather are frequent changing and because of this regular fishing get affected and in result annual income varied significantly.

Lack of education/training is major issue, due to these fishermen are not able or restricted to learn or adopt new technology.

7. LIMITATIONS

1. Inaccurate responses – It was critical to reach rural areas and crab fisherman again to provide the incomplete information due to distance, non-connectivity and bad climatic condition.

2. Covid – It was risky and unable to reach remote parts of Andaman and Nicobar Islands.

REFERENCE

1. A.A. Laithb,, M. Ambaka , A.B. Abol-Munafib , W.W.I. Nurhafizaha , M. Najiaha (2017), Metabolomic analysis of marine and mud crabs based on antibacterial activity, Aquaculture Reports, by Elsevier B.

2. Jose Josileen, A. P. Dineshbabu, P. T. Sarada, Gyanaranjan Dash, Indira Divipala, Rajan Kumar, Raj Kumar, K. N. Saleela, S. Lakshmi Pillai, Rekha Devi Chakraborty, N. Ragesh, L. Sreesanth, Sindhu K. Augustine¹ and T. V. Sathianandan (2021), Trends in marine crab fishery of India, Marine Fisheries Information Service Technical & Extension Series No. 249, 2021.

