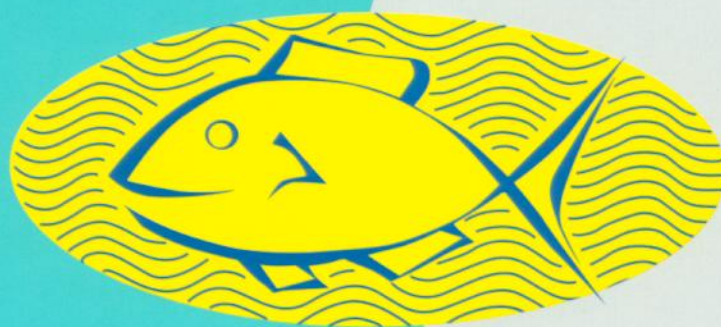


ISSN 0853 - 8980

INDONESIAN FISHERIES RESEARCH JOURNAL



AGENCY FOR MARINE AND FISHERIES RESEARCH
MINISTRY OF MARINE AFFAIRS AND FISHERIES

Ind. Fish Res. J.	Vol. 20	No. 2	Page 49 - 106	December 2014	ISSN 0853-8980
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ISSN 0853–8980

INDONESIAN FISHERIES RESEARCH JOURNAL

Volume 20 Number 2 December 2014
Acreditation Number: 503/AU2/P2MI-LIPI/10/2012
(Period: October 2012-October 2015)

Indonesian Fisheries Research Journal is the English version of fisheries research journal.
The first edition was published in 1994 with once a year in 1994. Since 2005, this journal
has been published twice a year on JUNE and DECEMBER.

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Published by:

Agency for Marine and Fisheries Research

Manuscript send to the publisher:

Indonesian Fisheries Research Journal
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Gedung Balitbang KP II, Jl. Pasir Putih II Ancol Timur Jakarta 14430 Indonesia
Phone: (021) 64700928, Fax: (021) 64700929
Website : <http://p4ksi.litbang.kkp.go.id>, Email: drprpt2009@gmail.com.

Indonesian Fisheries Research Journal is printed by Research Center for Fisheries Management and Conservation Budgeting F.Y. 2014.

PREFACE

Indonesian Fisheries Research Journal Volume 20 Number 2 December 2014 is the first publication of English journal of the Research Center for Fisheries Management and Conservation in 2014. The journal is expected to be a source of newest science and technology for all scientists and researchers in Indonesia and other countries. The financial for publication is provided by the Research Center for Fisheries Management and Conservation budget in the fiscal year of 2014.

This volume contains: Reproductive characteristics of Indonesia mahseer (*Tor tambroides*, Bleeker, 1854), in two different rivers in western Sumatera; Potential production of the five predominant small pelagic fish species groups in the Java sea; Exploitation and catch fluctuation of small pelagic fishes in prigi waters, south coast of Java; Productivity and economic analysis of the indian ocean longline fishery landed at Benoa port Bali Indonesia; Initiation on ecosystem approach to fisheries management (EAFM): Case study on Tarakan Fisheries; Cost-Effective approach to estimate unreported data: Rebuilding history of lift-net fishing in Kwandang Waters.

We hope that all the articles on this volume may contribute significantly to the development of fishery science and technology in Indonesia. We are grateful to the editorial board for their improvement and suggestion on reviews of the manuscripts.

Editor

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INDONESIAN FISHERIES RESEARCH JOURNAL

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ABSTRACT

REPRODUCTIVE CHARACTERISTICS OF INDONESIA MAHSEER (*Tor tambroides*, Bleeker, 1854), IN TWO DIFFERENT RIVERS IN WESTERN SUMATERA

Arif Wibowo
IFRJ, Vol. 20 No.2, Page: 49-57

ABSTRACT

The reproductive characteristics of mahseer, *Tor tambroides*, were studied in Manna River and Batang Tarusan River, which are located on each side of Western Sumatera River. The reproductive period of *T. tambroides* is largely consistent with that described for the species in other areas, however monthly variations in the extent and timing of peak spawning are recorded. The analysis of the sex ratio indicates an increase in the percentage of females with size, more marked in largest sizes. Seasonal patterns in the occurrences of spawning showed that the spawning season in Manna River lasted was similar with that in Batang Tarusan River, although a second prominent increase of GSI was observed in April and September in Manna River, meanwhile the GSI of Batang Tarusan River fish were below 2 without an apparent variation. L_{50} s of Manna River and Batang Tarusan River mahseer were estimated as 24.5 cm and 20.66 cm, respectively, indicating a high variability in size at first maturity of the mahseer population. Our study provides some important information on the reproductive biology of *T. tambroides* that will be helpful in similar studies and contributed to fisheries management of this species.

KEYWORDS: Mahseer; Reproductive characteristics; Manna River; Batang Tarusan River

POTENTIAL PRODUCTION OF THE FIVE PREDOMINANT SMALL PELAGIC FISH SPECIES GROUPS IN THE JAVA SEA

Purwanto
IFRJ, Vol.20 No.2, Page: 59-67

ABSTRACT

The Java Sea is one of the important fishing areas for small pelagic fishery in Indonesia. The production of the fishery was dominated by five fish species groups. To support the management of that fishery, an assessment of the stock of the five predominant small pelagic fish species groups was conducted. Based on the result of analysis, the maximum sustainable yield

(MSY) of the stock of five predominant small pelagic fish species was about 244.6 thousand tons. Meanwhile, the MSY of the stock of the whole exploitable small pelagic fish species was about 315.5 thousand tons. The optimum fishing effort (E_{MSY}) was 1032 units. The total fishing effort was higher than E_{MSY} and the fish stock was likely over-exploited since 2000. To ensure the optimal fish production of the small pelagic fish stock in the Java Sea, it is necessary to recover fish stock by controlling fishing effort to E_{MSY} . The time which it takes for the fish stock to recover was about two years when fishing effort was reduced from its level in 2009 to E_{MSY} .

KEYWORDS: Potential production, optimal fishing effort, small pelagic fishery, the Java Sea

EXPLOITATION AND CATCH FLUCTUATION OF SMALL PELAGIC FISHES IN PRIGI WATERS, SOUTH COAST OF JAVA

Suwarso
IFRJ, Vol.20 No.2, Page: 69-76

ABSTRACT

Studies on the exploitation and catch fluctuations of pelagic fishes have been undertaken in order to understand the fishery systems, annual and seasonal change of fishing effort and catches, as well as species composition. The study was based on the daily monitoring data of the purse seiners. The results showed that generally the fishing activities is one day fishing, the increase of fishing effort reflected in the number of fishing units and the number of trip, while the trend of production and catch rate were fluctuated by either annual or seasonal; the peak of catch rate was occurred in 2007, 2008 and 2012 periods, during December to June were low catches, and are going in the peak season in September-October. The lowest catch rate is about 100kg/trip and the maximum of 4.3 tons/trip (the average of 1.3 tons/trip), however the fail of fishing was often occurs and reached 30% of the total number of trips; the failed fishing was decline from year to year. The catch rate (kg/trip/day) was showed a pattern fluctuations; the small pelagic fish mainly the scads (*Decapterus* spp.) and clupeids (Bali sardine, *Sardinella lemuru*), respectively 33% and 17%, whereas the dominant large pelagic fish is 'tongkol'/frigate tuna (*Auxis thazard*). The changes of species domination was occurred either in annually or seasonally

KEYWORDS: Exploitation, catch, purse seine, small pelagic fishes, Prigi, South Coast of Java

PRODUCTIVITY AND ECONOMIC ANALYSIS OF THE INDIAN OCEAN LONGLINE FISHERY LANDED AT BENOA PORT BALI INDONESIA

Fathur Rochman
IFRJ, Vol.20 No.2, Page: 77-86

ABSTRACT

This study highlighted the occurrence of productivity and economic analysis of Indian Ocean longline fishery which was landed in Benoa port Bali Indonesia. The aim of this study is to determine feasibility of tuna longline effort based on business analysis and current condition. The data used in this study based on the Research Institute for Tuna Fisheries (RITF) observer program in Benoa from 2010-2011. This paper presents the current information on Catch per Unit of Effort (CPUE) and feasibility analysis based on the recent economic parameters. The CPUEs of tuna longline vessel in 2010 and 2011 respectively were 288.35 kg/effort and 281.97 kg/effort. The feasibility analysis of Indian Ocean tuna longline effort showed that tuna longline efforts remains profitable and feasible with payback periods (year-3, month - 2 and day- 18), internal rate of return (53%), average rate of return (61.24%) and net present value between Rp 1.709.897.950,- (first year) and Rp 85.331.099.211,- (at the end of 25 years).

KEYWORD: CPUE, payback periods, net present value, internal rate of return and average rate of return

INITIATION ON ECOSYSTEM APPROACH TO FISHERIES MANAGEMENT (EAFM): CASE STUDY ON TARAKAN FISHERIES

Andhika Prima Prasetyo
IFRJ, Vol.20 No.2, Page: 87-98

ABSTRACT

An EAFM from a global perspective is still moving towards on implementation. EAFM is based on conventional fisheries management but broadens the perspective beyond seeing a fishery as simply "fish in the sea, people in boats," beyond consideration only of commercially important species, and beyond management efforts directed solely at the harvesting process. This research aims to initiate implementing EAFM in Indonesia: case in Tarakan Fisheries, North Kalimantan Province. From the initiate implementation of EAFM, we found that the possibility to improve the performance on arrange fisheries management based on ecosystem approach.

EAFM could be used as tools to confirm scientific findings and gathering initial information on fisheries. In the case, fisheries community in Tarakan was put human well-being as important point to determine fisheries management, rather than ecological well-being. To secure the fisheries the possible options would arrange accepted and adaptable policy on controlling fisheries i.e. temporary fishing closure in term of area and season.

KEYWORDS: Uncertainty, FGD, IFM, EAFM, Tarakan fisheries

COST-EFFECTIVE APPROACH TO ESTIMATE UNREPORTED DATA: REBUILDING HISTORY OF LIFT-NET FISHING IN KWANDANG WATERS

Andhika Prima Prasetyo
IFRJ, Vol.20 No.2, Page: 99-106

ABSTRACT

This paper aims to develop cost-effective approach regarding the estimation unreported annual catch data of lift-net fishery using Google Earth imagery. Lift net fishery is one of the main fishing activities of coastal community in Kwandang Bay, it has been faced problem of uncertain fisheries status due to limited recorded data. Combination of a Monte Carlo procedure was applied by involving couple of assumptions on parameters such as estimate growth rate of the total number of lift-net per years (10%), day at sea per unit per month (21 days) and operated lift-net per month (50% and 80%). The results showed that 101 units of lift-nets were found around Kwandang waters based on Google Earth imagery recorded in October, 7th 2010, and this were used as a benchmark of calculation. This prediction was 28 units higher than official data from North Gorontalo District of Marine Affairs and Fisheries Services (DKP Gorontalo Utara). Compared with capture fisheries statistics issued by Kwandang CFP, the estimated lift-net catches based on two-scenarios represent additional catches of 46 % and 86 %. These results suggested and could be used as a correction index to improve the reliability of Kwandang District officially reported fisheries statistics as a baseline to develop a local common fisheries policy.

KEYWORDS: Cost-effective approach, unreported data, lift-net fishing, Kwandang waters