SMALL TUNA FISHERIES AND RESOURCES IN THE ANDAMAN SEA

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INTRODUCTION

During the last two decade small tunas were caught incidentally by purse seiners and gill-netters which were targeting on other pelagic species such as mackerels, scads and sadines. Since 1983, small tunas become the significant species for pelagic fisheries in the Andaman Sea, due to the demand for tuna canneries was steadily increased and together with the development of pelagic fisheries, particularly purse seiners. Its resulted in a spectacular increased of small tunas production in the Andaman Sea which have grown from 2,880 MT or about 4.4% of the total pelagic production in 1983 to the peak of 42,611 MT or about 15.3% of the total pelagic production in 1995. Moreover, the contribution of small tunas from the Andaman Sea landing has increased from 10% in 1984 to 33% in 1995, with the small tuna fisheries and resources in the Andaman Sea play a much more significant role than the past.

FISHING GEARS

The main fishing gears used for catching small tunas in the Andaman Sea are purse seines which consist of regular purse seines and tuna purse seine, regular purse seines operated by searching fish school and luring techniques, which targeting on small pelagic fish such as mackerels, round scads, sardines and also small tunas. The size of regular purse seines boat ranging from 18-24 m with the length of the net from 500-1,200 m and 50-130 m in depths the common mesh size used about 2.5 cm. For tuna purse seines boat which targeting on small tunas, the size was over 24 m with the net of 120-150 m in depth, 1,200-1,600 m in length and 9.4 cm mesh size.

SMALL TUNA SPECIES

The species commonly found during 1998-2001 are frigate tuna (*Auxis thazard*), kawakawa (*Euthynnus affinis*), longtail tuna (*Thunnus tonggol*), skipjack tuna (*Katsuwonus pelamis*) and bullet tuna (*Auxis rochei*) which shared about 44.7%, 40.0%, 8.5%, 3.5% and 2.9% respectively, Besides these five species yellowfin tuna (*Thunnus albacores*) and dogtooth tuna (*Gymnosarda unicolor*) were also caught occasionally in a less quantity.

FISHING GROUND AND FISHING SEASON

The fishing grounds of small tunas in the Andaman Sea have been expanded along the coast with in the range 3-45 km from shore and the depth range from 30-200 m. However, the intensive fishing area of regular purse seines and tuna purse seine are in the depth less than 70 m and 80-120 m respectively. The catch of small tunas occurred all year round with the peak is clearly evident between February to April. It can be stated that the fishing season of small tunas along this coast was considered during the Northeast monsoon from November to April.

SIZE COMPOSITION

Due to the fishing ground of small tuna fisheries are mostly operated in shallow water (<200 m), the size of small tunas caught are small size and medium size in the ranged from 10-60 cm of folk length.

BIOLOGICAL ASPECTS

Spawning period of small tunas are twice peaks, kawakawa around January-March and June-July, frigate tuna around February-April and September and for longtail tuna around March-May and August-December.

Size at first maturity of kawakawa, frigate tuna and longtail tuna are about 37.0 cm, 34.0 cm and 40.0 cm respectively.

Spawning ground and nursing ground of small tunas have been expanded along the lower part of the coast at the depth range from 30-60.

ASSESSMENT OF TUNA STOCKS

The stock size of tuna can not be estimated from limited area of Thai waters, because of tuna species are highly migratory species and tend to have their distribution extending beyond Thai waters, probably entire Malacca Strait or through out the Andaman Sea or beyond which is still unknown patterns. To assess the stock stock size of small tunas, and appropriate production analysis should be based on data from the whole areas.

INTERACTION BETWEEN FISHERIES

The interaction between fisheries, particularly purse seinc fisheries in the Andaman Sea probably have not certainly appeared, due to the tuna purse seine and regular purse seines are the same owner or company and also operate concentrated in difference fishing area.

RESEARCH ACTIVITIES

Since the development and the rapid growth of the tuna industry, supplies of raw frozen tuna for the canneries have become critical because of the stabilized domestic tuna catch, This is an urgent problem to be solved for the Thai government. As a general strategy, the Department of Fisheries continues to focus on research, development, extension, training, statistics, resource management, quality control etc.

Therefore, particular attention has to be concentrated on the basic biological investigation and other relevance information upon which to base an assessment on the state of exploitation of tuna stock in Thai waters.

The Department of Fisheries has stressed the important of a properly designed sampling scheme to collect data on catch/effort, length frequency, biological parameters, egg and larval ecology and other relevant topics for evaluation of tuna available stocks.

In order to meet the objective of increasing the domestic catch up to about one-third of the requirements of the tuna industry, considerable effort is under way towards improvement of fishing techniques by purse seine, longline etc, and to upgrade skill and technology of the domestic fisherman and the fishing fleet to operate in the high sea.

STATISTICS COLLECTION

Since April 2000, the Indian Ocean Tuna Commission (IOTC) has supported the Department of Fisheries (DOF) in implementing the Sampling Program on Tuna Longline Vessels Unloading in Phuket. The sampling program was extended in April 2001, the second year of the program. As in the first sampling program from April 2000 to March 2001, port samplings were conducted to collect information on longline fisheries such as number of landings (931 trips), vessel operating (931 trips), weight samples (58,748 samples), interview forms (I-II, 49 forms ; III, 65 forms), biological samples (5,255 samples) and others activities (998 samplers); total catch from customs recorded as 3,909 mt.

The objective of this sampling program is to improve data collection on tuna longline fisheries in the East Indian Ocean as well as information on the activities, nominal catches, catch breakdown by species and size composition for each species caught by tuna longliners and unloaded in Phuket since April 2001.