STATUS OF FISHING GROUNDS FOR SURIMI RAW MATERIALS IN THE SOUTHEAST ASIAN COUNTRIES

BASE ON SEAFDEC FISHERY STATISTICAL BULLETIN AND CATCH PER UNIT EFFORT (CPUE) OF TRAWLER

Threadfin bream (*Nemipterus* spp.) Lizard fish (*Saurida* spp.) Bigeye (*Priacanthus* spp.) Croaker (*Johnius* spp., *Pennahia* spp.) and Goatfish or Red mullet (*Upeneus* spp., *Parapeneus* spp.) are economically important demersal fishes distributed from the coastal area to the continental shelf slope in the Southeast Asian Region. These species are commonly used as raw materials for Surimi manufacture in the region.

In 2005 SEAFDEC/ Training Department has initially conducted an activity on information collection of economically important species as Surimi raw materials under the Japanese Trust Fund project: Development of Demersal Fishery Resources Living in Un-trawlable Fishing Ground in the Southeast Asia Waters.

The pre-analysis on the status of Surimi Industry collected in the Southeast Asian countries established a linkage between demand of raw materials (Surimi industry) and demersal resources as the supplier. For this reason, it is important to understand the status of demersal resources as surimi raw materials and search for new fishery resources existing in the region.

This will present a trend of demersal fishes which focus on Surimi raw materials species for Southeast Asian regions base on SEAFDEC Fishery Statistical Bulletins, CPUE of trawlers which had sources of data from resource survey of M.V.SEAFDEC 2, scientific paper and statistic report.

FISHERIES STATISTIC OF IMPORTANT SPECIES AS SURIMI RAW MATERIALS IN THE SOUTHEAST ASIAN REGION

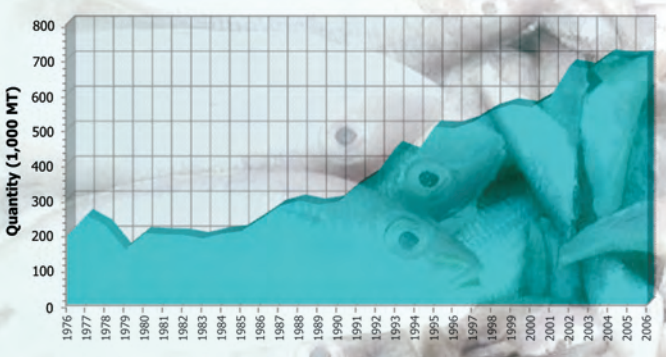


Figure 1

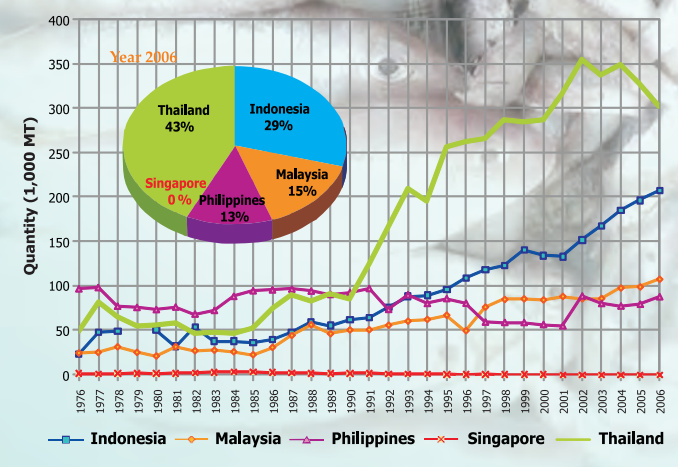


Figure 2

From SEAFDEC Fishery Statistical Bulletin show that in Southeast Asian region the capture production growth for all 5 families of demersal fishes that use as Surimi raw materials (Nemipteridae, Synodontidae, Priacanthidae, Sciaenidae and Mullidae) has been very strong for the past 3 decades to a level of 706,143 MT in the year 2006. (Figure 1)

Considering by country, Figure 2 show that from the year 1976 till 1990 capture data of every countries were increased but not too strong, after the year 1990 the capture production from Thailand was increased almost 4 times from 85,516 MT to 355,679 in 2002 after this time the production was not stable and decrease to 303,276 MT in 2006. From this rapidly increasing cause the demersal fishes capture production of Thailand highest for a decade and cause the total production in this region were rapidly increased. For Indonesia a trend after 1989 was strongly increased to a level of 207,285 MT in the year 2006. For Malaysia the capture production was slowly increased till 2006. Philippines the capture production growth has been decreased after 1991 to 54,796 MT in 2001 and increased to 88,855 MT in 2002 after that the capture production were slowly decreased to 87,914 MT in 2006. For Singapore the capture production was not much for those demersal species.

For recent years the capture production had been decreasing especially the production from Thailand, due to the decline of demersal resources in the region.

DEMERSAL RESOURCES SURVEY FROM M.V.SEAFDEC2 2004-2006

Mean CPUE (kg/hr) were calculated by using this equation
"Mean CPUE = exp(meanCPUE $_{\text{log-scale}}$ + Variance CPUE $_{\text{log-scale}}$)"

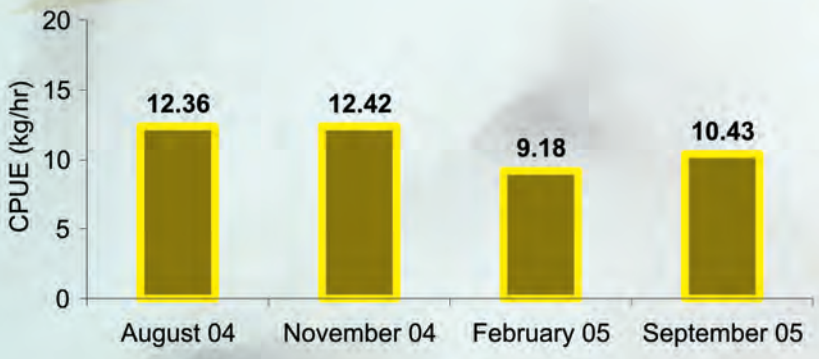
Figure 3 Survey station of M.V.SEAFDEC2.

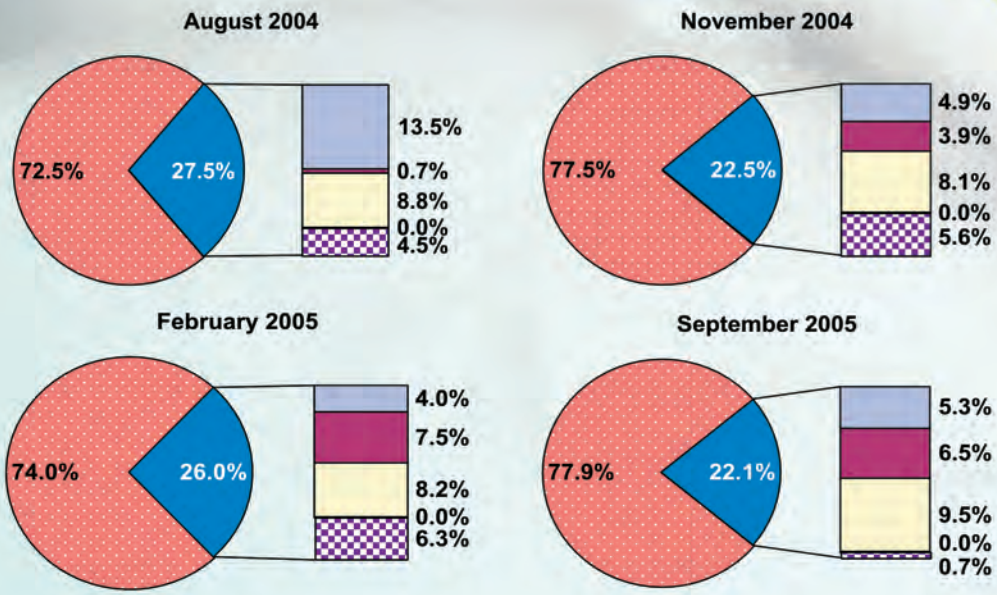
THAILAND

In the Gulf of Thailand, the resources survey by bottom trawl had taken in the 4 periods are;

- August 2004 21 stations
- November 2004 21 stations
- February 2005 22 stations
- September 2005 13 stations

All those periods, the bottom trawl had operated between 29.0 to 77.0m depth. From the catch composition found the surimi species around 22.1 - 27.5%.



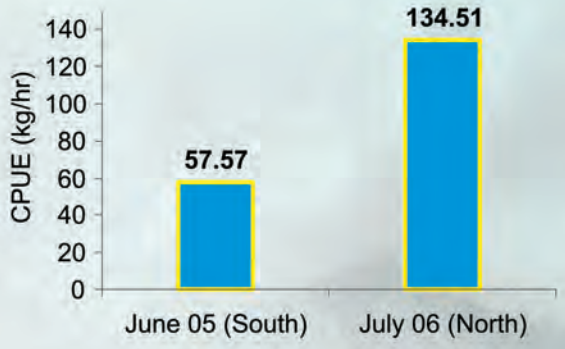


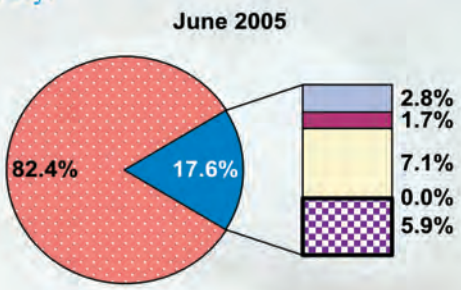
INDONESIA

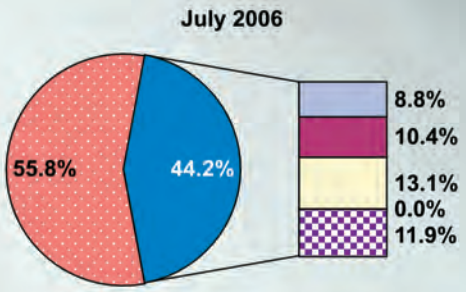
For Indonesia, the survey had conducted in the Western Kalimantan waters. The survey had taken in 2 periods are;

- June 2005 20 stations
- July 2006 12 stations

The bottom trawl had operated between 28 to 77m depth in June 2005 and 49 to 101m depth in July 2006. From the catch composition found the surimi species around 17.6% and 44.2% in the year 2005 and 2006 respectively.



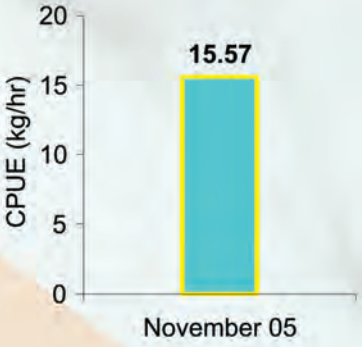


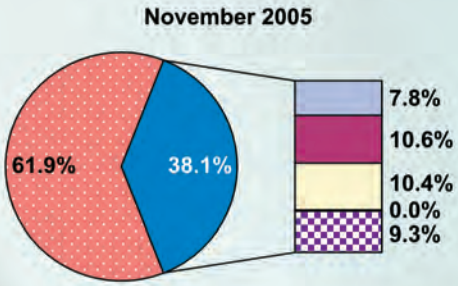


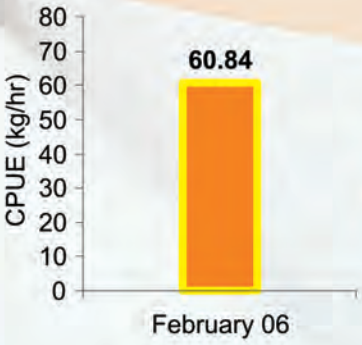
CAMBODIA

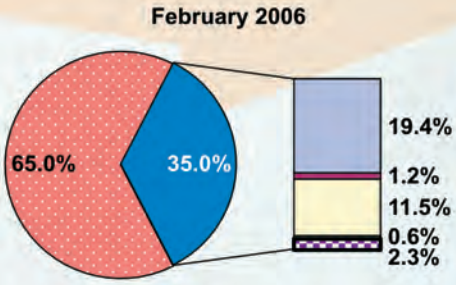
For Cambodia, the resources survey had conducted in November 2005 which had surveyed in 10 stations.

The bottom trawl was used in the survey which had operated between 30 to 71m depth. From the catch composition found the surimi species around 38.1%.









MALAYSIA

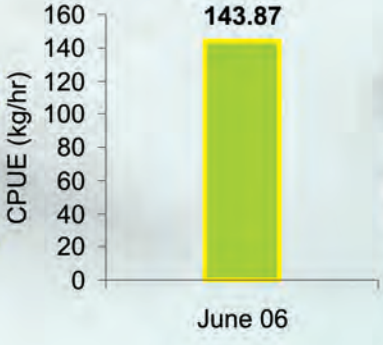
In Malacca Strait, the resources survey had conducted in February to March 2006 which had surveyed in 24 stations.

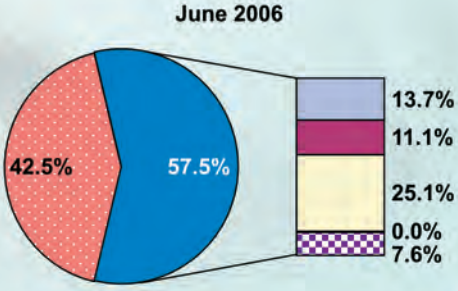
The high opening bottom trawl was use in the survey which had operated between 40 to 80m depth. From the catch composition found the surimi species around 35%.

BRUNEI DARUSSALAM

For Brunei Darussalam waters, the resources survey had conducted in June 2006 which had surveyed in 7 stations.

The bottom trawl was used in the survey which had operated at over 100m depth. From the catch composition found the surimi species around 57.5%.





STATUS OF FISHING GROUNDS FOR SURIMI RAW MATERIALS

VIETNAM

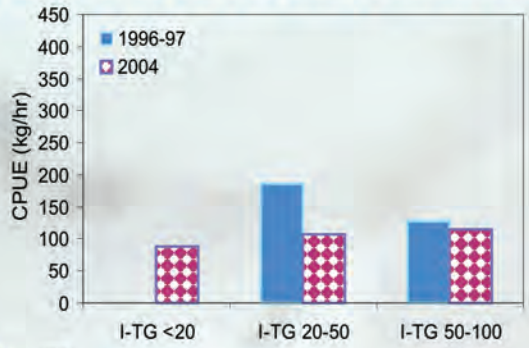
Total CPUE (kg/hr)

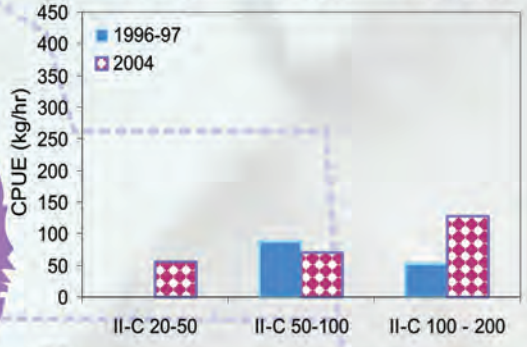
(Data sources: Research paper&database)

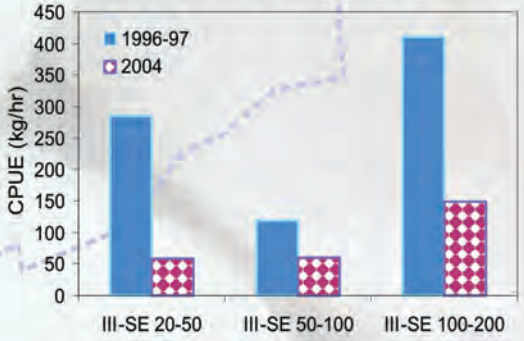
These data had collected in 1996 to 1997 by using otter board high opening trawler, which had 32m length.

In the year 1996-1997, CPUE were higher than in the year 2004.

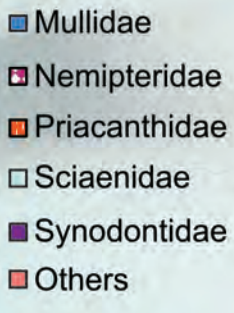
The highest CPUE is in Southeast area and the lowest CPUE is in the Central area.

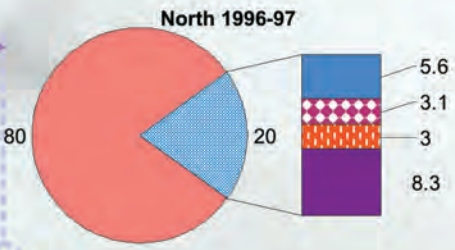


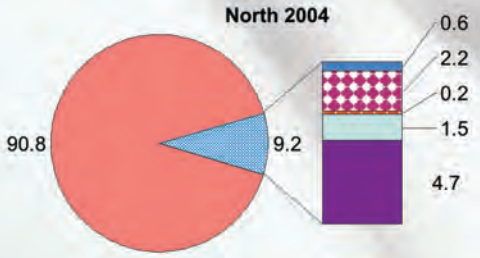


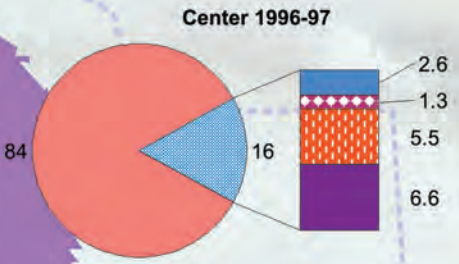


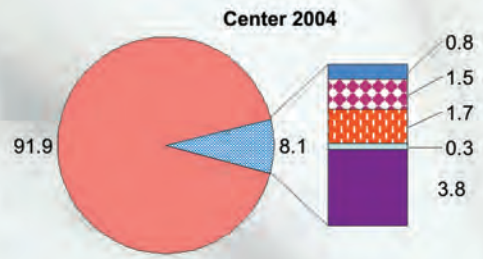
SPECIES COMPOSITION OF CATCH FROM COMMERCIAL TRAWLER

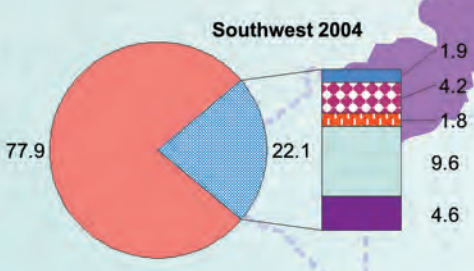


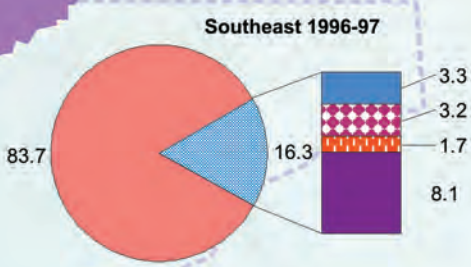


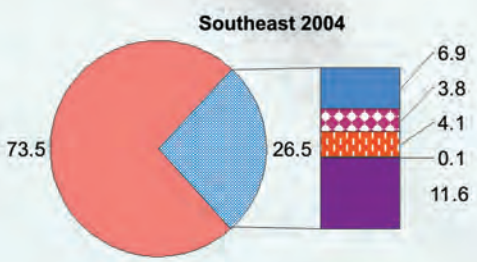






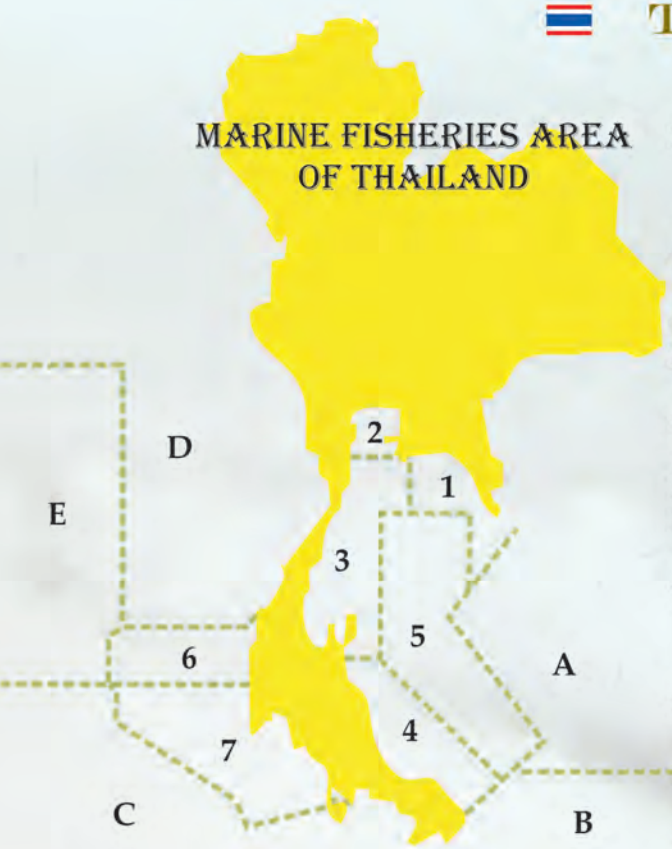






Reference: Daug V.T., D.Tran, R.Nielsen and F. Riget, *Results of bottom trawl surveys carried out in Vietnamese waters (20-200 m) in 1996-1997.*

THAILAND



Fishing area of Thai fishermen are comprised of 7 domestic (1-7) and 5 oversea (A-E).

In the Gulf of Thailand divided into 5 Areas as follows

- Area 1 Eastern Gulf of Thailand consist of waters of Trat, Chanthaburi and Rayong Provinces
- Area 2 Upper Gulf of Thailand consist of waters of Chon Buri, Chachoengsao, Samut Prakan, Bangkok, Samut Sakhon, Samut Songkhram and Phetchaburi Provinces
- Area 3 Upper Western Gulf of Thailand consist of waters of Chumphon, Prachuap Khiri Khan and Surat Thani Provinces
- Area 4 Lower Western Gulf of Thailand consist of waters of Nakhon Si Thammarat, Songkhla, Pattani and Narathiwat Provinces
- Area 5 Central Gulf of Thailand consist of waters in the Center of the Gulf adjacent by EEZ of Malaysia, Vietnam and Cambodia

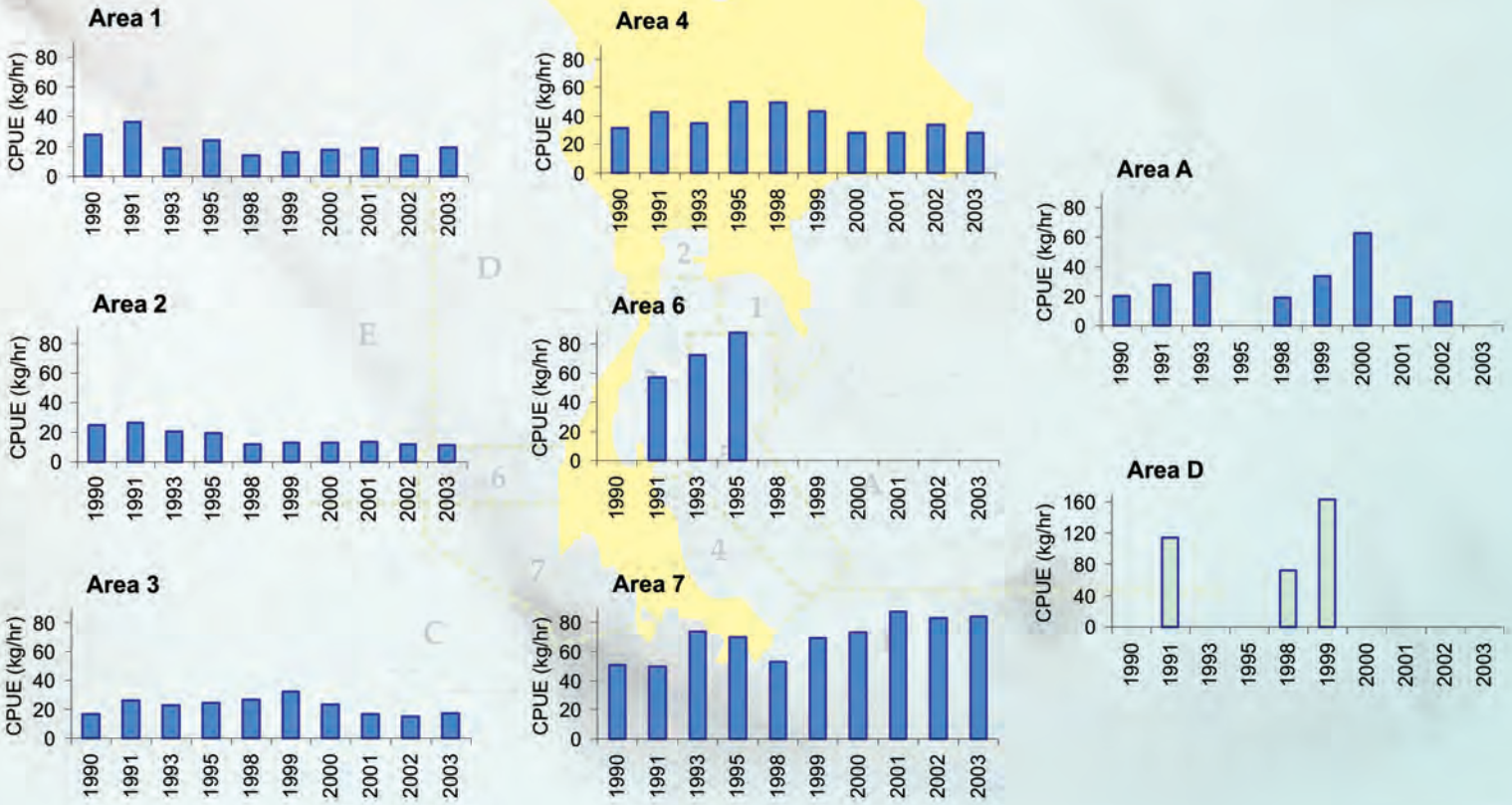
In the Andaman Sea divided to 2 Areas as follows

- Area 6 Upper part of the Andaman Sea consist of waters of Ranong, Phang-nga and Phuket Provinces
- Area 7 Lower part of the Andaman Sea consist of waters of Krabi, Trang and Satun Provinces

The fishing areas outside Thai waters divided to 5 Areas as follows

- Area A Northern part of the South China Sea
- Area B Southern part of the South China Sea
- Area C Malacca Strait in the Andaman Sea
- Area D Myanmar Waters in the Andaman Sea
- Area E Bangladesh Waters in the Andaman Sea

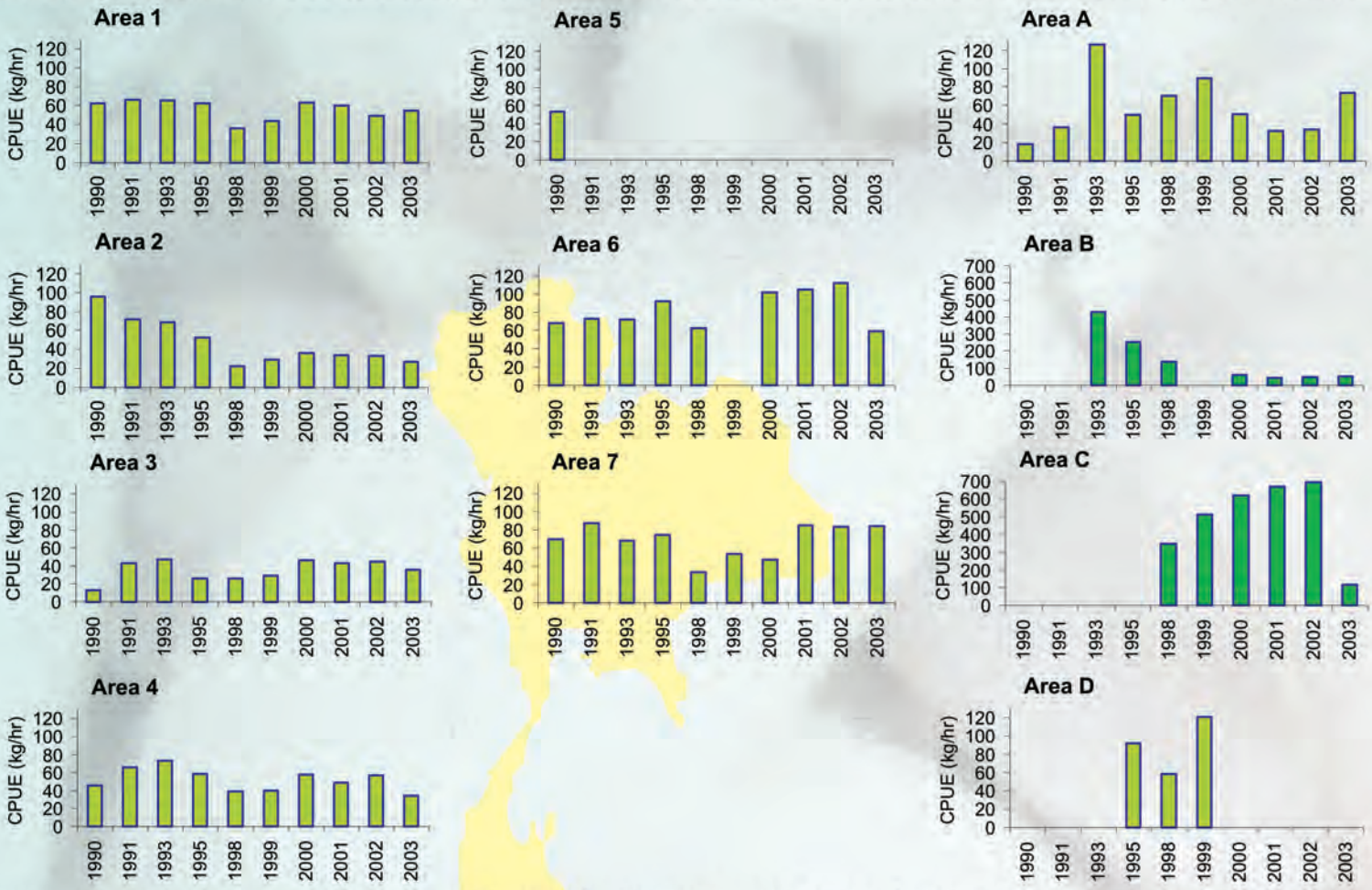
CPUE (KG/HR) OF OTTER BOARD TRAWL [BOAT SIZE LESS THAN 14M] (1990-2003)



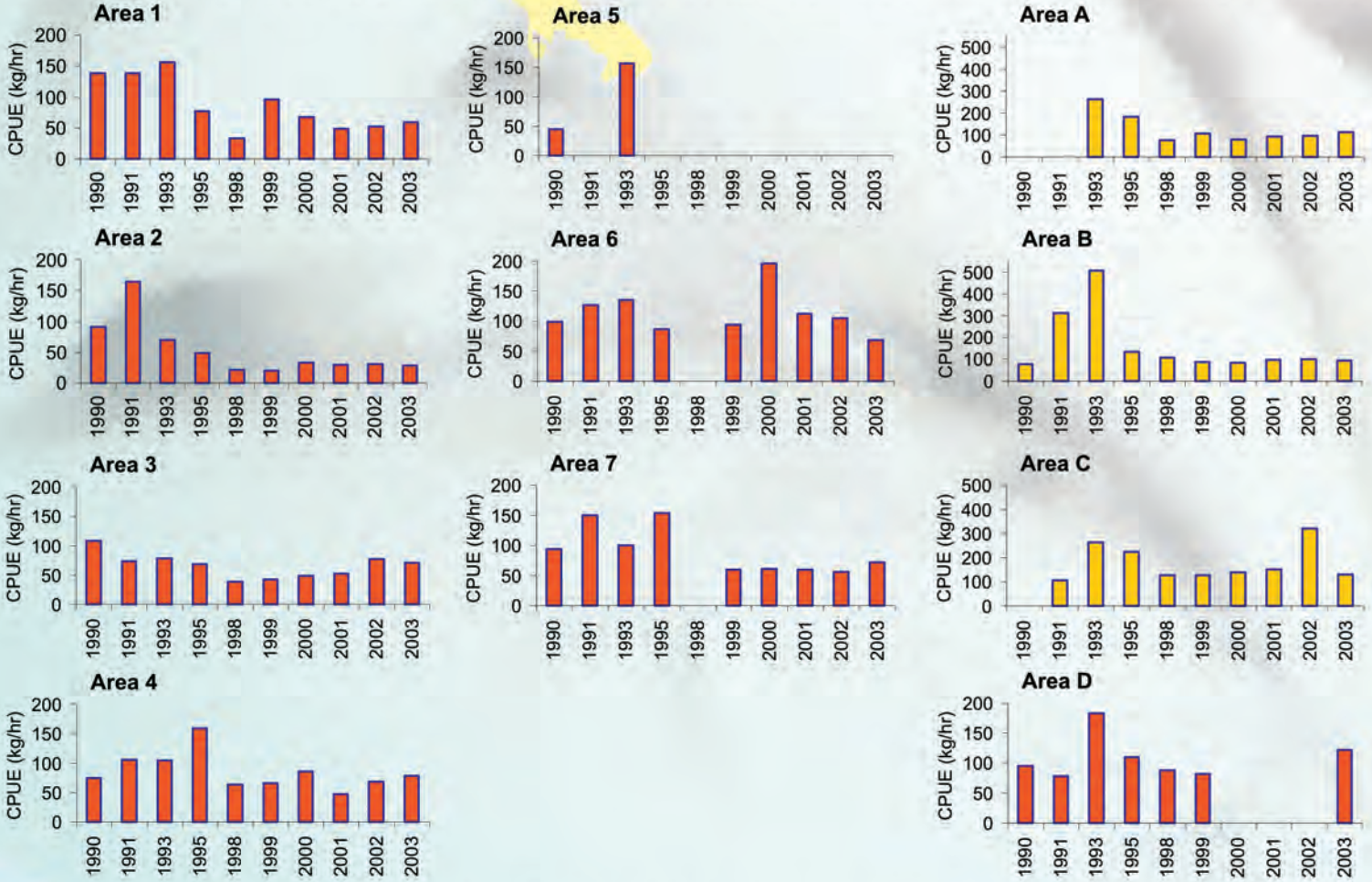
Source of data: The marine fisheries statistic base on sample survey of 1987 to 2003 (DOF Thailand)

THAILAND

CPUE (KG/HR) OF OTTER BOARD TRAWL [BOAT SIZE BETWEEN 14 TO 18M] (1990-2003)



CPUE (KG/HR) OF OTTER BOARD TRAWL [BOAT SIZE BETWEEN 18 TO 25M] (1990-2003)

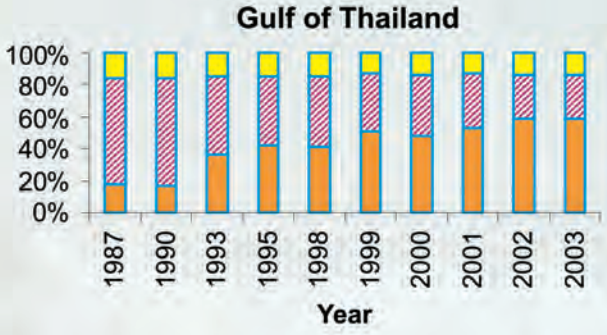


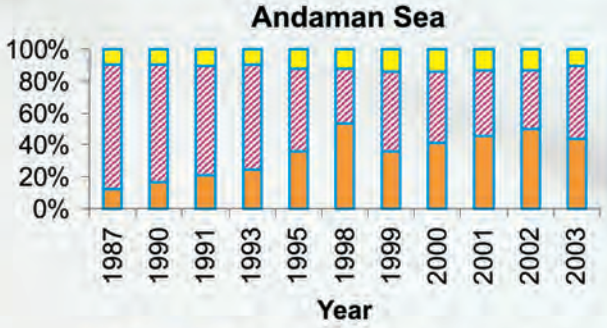
Source of data: The marine fisheries statistic base on sample survey of 1987 to 2003 (DOF Thailand)

THAILAND

CATCH COMPOSITION FROM OTTER BOARD TRAWL

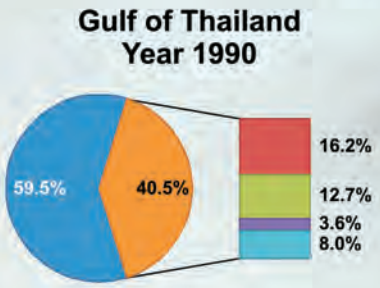
Total production

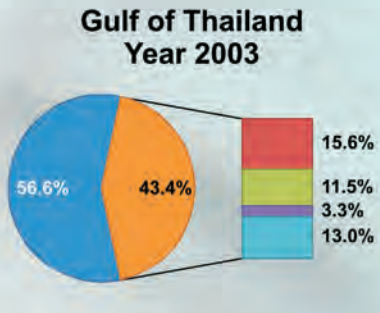


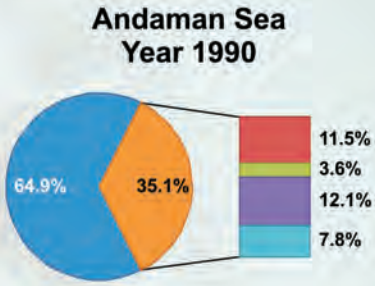


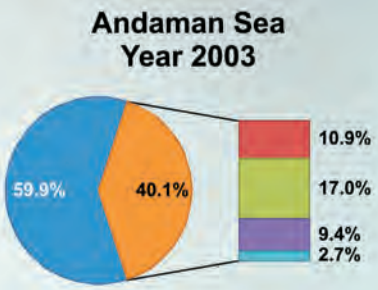
Other Other fish Surimi species

Target fish





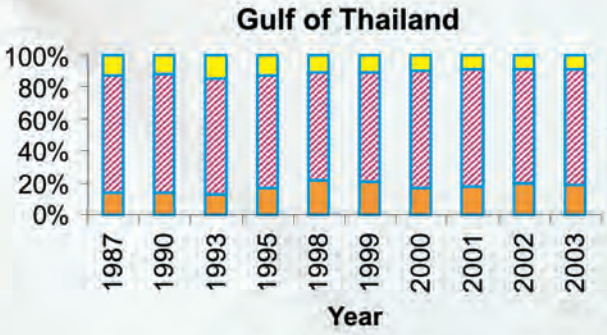


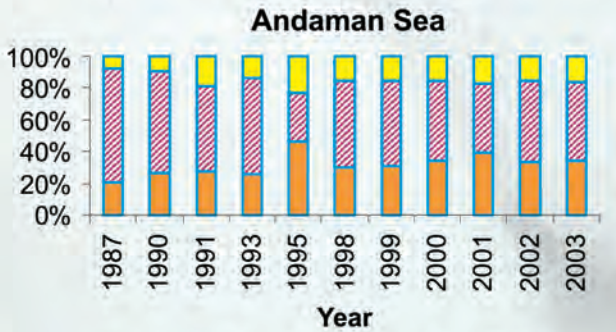


Other Demersal fish Nemipteridae Priacanthidae
Sciaenidae Synodontidae

CATCH COMPOSITION FROM PAIR TRAWL

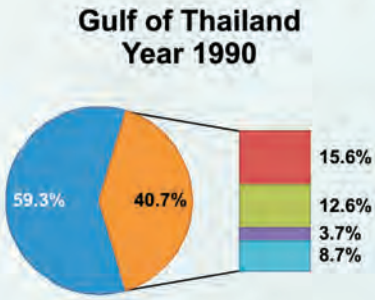
Total production

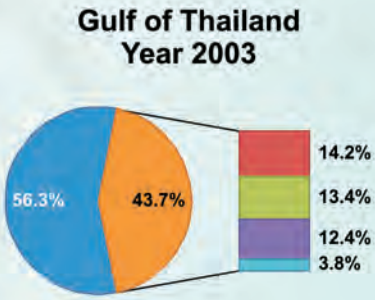


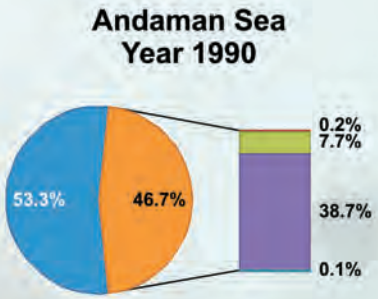


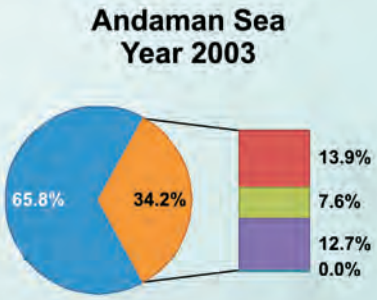
Other Other fish Surimi species

Target fish









Other Demersal fish Nemipteridae Priacanthidae
Sciaenidae Synodontidae

Source of data: The marine fisheries statistic base on sample survey of 1987 to 2003 (DOF Thailand)

What is SEAFDEC?

The Southeast Asian Fisheries Development Center (SEAFDEC) is an autonomous intergovernmental body established as a regional treaty organization in 1967 to promote sustainable fisheries development in Southeast Asia.

Objectives

SEAFDEC aims specifically to develop fishery potential in the region through training, research and information services in order to improve the food supply through rational utilization of fisheries resources in the region.

Functions

To achieve its objectives the Center has the following functions:

1. To offer training courses, and to organize workshops and seminars, in fishing technology, marine engineering, extension methodology, post-harvest technology, and aquaculture.

2. To conduct research and development in fishing gear technology, fishing ground survey, post-harvest technology and aquaculture, to examine problems related to the handling of fish at sea and quality control, and to undertake studies on the fisheries resources in the region; and

3. To arrange for the transfer of technology to the countries in the region and to make available the printed and non-printed media, which include the publication of statistical bulletins for the exchange and dissemination related to fisheries and aquaculture development.

Membership

SEAFDEC members are the ASEAN Member Countries (Brunei Darussalam, Cambodia, Indonesia, Lao PDR., Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam) and Japan.

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