

# Inventory Of Fish Products In Southeast Asia

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## Introduction

At the 17th Meeting of the Council of the Southeast Asian Fisheries Development Center in 1984, the Council Director for the Philippines stressed the need for an inventory of fish products in Southeast Asia.

The Council then called on the Marine Fisheries Research Department to compile an inventory of fish products in Southeast Asia. The objective was to list the fish products available in the ASEAN countries and the technical problems and constraints in marketing.

The ASEAN countries participating in the survey were:

1. Brunei Darussalam
2. Indonesia
3. Malaysia
4. Philippines
5. Singapore, and
6. Thailand

A wide variety of fish products are consumed in the ASEAN countries. Based on a literature search, the fish products have been broadly classified as (alphabetical):

- a) Boiled
- b) Canned
- c) Comminuted
- d) Cured
- e) Dried
- f) Fermented
- g) Fish meal
- h) Frozen
- i) Powdered/flaked
- j) Smoked
- k) Others

A questionnaire was sent to participating countries in 1984. The first inventory was subsequently published in September 1987. Encouraging feedback and remarks have been received regarding the first inventory and resulted in a reprint in August 1988. The findings were also presented at the 20th SEAFDEC Anniversary Seminar on Development of Fish Products in Southeast Asia held in October 1987 in Singapore.

Participants at that Seminar welcomed the publication and recommended periodic updating of information for use by researchers, food scientists, fish technologists, administrators, fish traders and others in the private sector.

Heeding this recommendation, a second survey was conducted in August 1989 and published in April 1991. The questionnaire incorporated suggestions from users of the first inventory and included comprehensive background information on fish products.

## Achievements Of First And Second Inventories

The important fish products of Southeast Asia are identified in the two inventories. They also record the current status of a large variety of interesting products, and outline areas for improvement. The 1987 publication listed traditional fish products which needed urgent improvement, especially dried, fermented and smoked products. These traditional products are consumed widely in the ASEAN countries. Some traditional products presently produced for the local market are perceived to have export potential. Upgrading these products will benefit both the local and overseas markets.

The 1989 survey recorded additional fish products not listed in the first survey. These include canned, comminuted, frozen and other products. A list of the fish products consumed in Southeast Asia is shown in Table 1.

The publications also recorded other details of the fish products. These included the English and local names of the products, a description of the products and how they are consumed in the country. The materials, including type of fish, ingredients and the cost and processing methods associated with the products were recorded. The conditions of the final products, together with their packaging conditions, shelf life, storage methods/temperatures and retail prices were documented. Efforts were also made to obtain the production volume of the products from 1984 to 1987. It was noted that these data are normally not available or are difficult to collect. To ease this problem, SEAFDEC's Fishery Statistical Bulletin of the South China Sea Area (at the 6th Regional Workshop on Fishery Statistics in Southeast Asia, Bangkok, 1-4 Jul 86) adopted the same classification of products (except powdered product, which is consumed in small quantities) as used in the inventory. Therefore the production/export volume of the fish products will be reflected in the future issues of the Bulletin.

The publications also list the problems faced in the production and marketing of the fish products. The main problems faced are short storage life, the need to improve packaging to extend shelf life, processing methods and quality of raw materials. These problems are inter-related and affect the quality of the final products. The problems are summarised in Table 2.

### **Additional Achievements Of Second Inventory**

The second inventory was designed as a follow-up to the first edition, with more information on the products, and improved features. Photographs have been included to aid users unfamiliar with the products. The format of the inventory is also more user-friendly. For example, it is possible to compare details of the same

products amongst the ASEAN countries using the summary tables.

Readers of the inventory have expressed appreciation of the first edition. The compilers feel that the second edition will provide even better service to scientists and food technologists concerned with research and development of fish products in Southeast Asia. It should also benefit other readers, for example, processors from the private sector, in providing them with understanding of the products they are handling.

### **Problems Encountered In Compiling The Inventory**

Some problems were encountered during compilation of the survey. It is hoped that these problems can be overcome in this Workshop, thus facilitating future compilation.

We would like to share two problems:

#### **1. Questionnaire forms**

The questionnaire forms (Annex 1) were designed so as to be easy to fill up. However, unfilled or incompleted forms continue to be a major problem. The compilers have suggested in the beginning that fish products, not produced in the country, should be indicated "NA" in the category of products. This is to avoid confusion where products are available but are not being recorded. In practice, incomplete returns are sent back to co-ordinators for completion and verification. A minimum period of one month is allowed for this verification process. Sometimes, questionnaires must be returned several times in order to complete the forms.

#### **2. Information received**

It is very important that information received be accurate, as in the case of production/export data. The production volume is for local and export consumption. Sometimes export volume are reported to exceed the production volume.

References listed in the inventory should be easily available. The MFRD believes that the ref-

**Table 1. Table of fish products listed in survey.**

PRODUCT	BRUNEI DARUSSALAM	INDONESIA	MALAYSIA	PHILIPPINES	SINGAPORE	THAILAND
Boiled	NA	Boiled fish	Boiled fish	NA	Cooked fish	Steamed fish
Canned	NA	Canned mackerel Canned tuna Canned sardine	NA	Milkfish in tomato sauce Milkfish, Salmon style Milkfish in oil Tuna in oil Sardine in tomato sauce Mackerel in tomato sauce	NA	Canned shrimp, babyclam, crab meat, fish in tomato sauce, tuna
Comminuted	Fishball Fishcake	Fishball	Fishball Fishcake Scallop flavoured fishcake Fish sausage Prawn sausage Cuttle fish sausage Prawn dumpling Prawn burger Fish burger <i>Otak-otak</i>	Fishball Native sausage Fish burger	Fishball Fishcake Cuttlefish ball Imitation crab meat	Fishball Fish noodle Surimi Imitation crab meat
Cured	NA	NA	NA	Cured fish	NA	NA
Dried	Salted fish Dried prawn Chilled sour salted fish Dried fish	Dried salted fish	Dried anchovy Dried/salted fish Dried prawn Dried cockle Dried cuttlefish Dried shellfish Dried jellyfish	Dried anchovy Dried shrimp Dried squid Dried fishes: anchovy, milkfish, lizardfish, hairtail, mackerel, scad, nemiptarid, barracuda, cravalle, slipmouth, herring, sardine, shark fin, abalone, sea cucumber	Dried sea cucumber Dried shark fin	Dried salted fish Dried shrimp Dried squid Dried shellfish Dried salted freshwater fish Dried jelly fish

Table 1. Table of fish products listed in survey (contd.).

PRODUCT	BRUNEI DARUSSALAM	INDONESIA	MALAYSIA	PHILIPPINES	SINGAPORE	THAILAND
Fermented	Fermented fish Fermented fish stomach Fermented mussel Shrimp paste Pickled shrimp	Fermented fish paste Fermented fish Fish sauce	Prawn paste Shrimp paste Fermented anchovy Pickled prawn	Shrimp paste Fish sauce Fish paste	NA	Fermented fish Fermented fish sauce Shrimp paste
Fish meal	NA	Animal feed	Animal feed Fish manure	Animal feed	Animal feed	Animal feed
Frozen	NA	Frozen product: fish shrimp, squid	Frozen cuttlefish Frozen prawn Frozen fish	Frozen product: milkfish, shrimp, prawn, tuna	Fish including fillet, steak, loin Prawn/shrimp Cuttlefish, squid	Fish Raw shrimp Cooked shrimp Cuttlefish Squid Octopus Shellfish
Powdered	NA	NA	Prawn dust	NA	NA	Fish floss
Smoked	Smoked semi-dried fish Smoked dried fish	Smoked fish	Smoked tuna	Smoked boneless milkfish Smoked sardine, roundscad, herring, milkfish	NA	Dried smoked fish
Others	Prawn cracker Squid cracker Fish cracker	Cracker	Fish cracker Prawn cracker Barbecued fish	Shrimp <i>kropeck</i> Seaweed	Prawn cracker Prepared cuttlefish	Shrimp/fish cracker Fish satay

**Table 2. Summary table of technical problems raised in survey.**

PRODUCTS	BRUNEI DARUSSALAM	INDONESIA	MALAYSIA	PHILIPPINES	SINGAPORE	THAILAND
Boiled	NA	Nil	Nil	NA	NA	To improve processing method and short storage life.
Canned	NA	NA	NA	Low fish supply and high cost of tin cans	NA	Nil
Comminuted	Short storage life. To improve packaging.	Nil	Nil	Nil	Nil	Short storage life.
Cured	NA	NA	NA	Problem on handling and sanitation causes reddening, souring, salt burn and slimy product.	NA	NA
Dried	To improve packaging and storage life.	Low hygiene requirement due to traditional processing method.	Lack of quality control of dried anchovy. Turnover is based on dryness of product.	Problem on packaging, hygiene/sanitation.	Nil	To improve processing method.
Fermented	To improve storage and package of product.	Nil	Fermented anchovy. Irregular supply of raw material. Poor sanitation of processing products.	Long fermentation period, rust on bottle caps.	NA	Fermented fish ( <i>plara</i> ) - spoilage caused by mould growth & insect/fly infestation during fermentation process and marketing. Fermented fish sause ( <i>nam pla</i> ), fish sause ( <i>budu</i> ), & shrimp paste-blackening of fish sauce which made the product unattractive. Good quality fish sauce must have clear red-brownish liquid. A good quality shrimp paste must have a purple brown colour, smooth texture and salty krill flavour.

Table 2. Summary table of technical problems raised in survey (contd.).

PRODUCTS	BRUNEI DARUSSALAM	INDONESIA	MALAYSIA	PHILIPPINES	SINGAPORE	THAILAND
Fish meal	NA	Nil	Shortage of raw material & competition from imported fish meal.	Nil	Nil	Problem on price and freshness of raw material.
Frozen	NA	Nil	Nil	Nil	Nil	Nil
Powdered	NA	NA	Nil	NA	NA	To improve packaging of product. Mould growth during storage.
Smoked	To improve handling & packaging of product and prevent mould growth during storage.	Nil	Nil	Mould & bacterial spoilage during storage.	NA	Problem on packaging.
Others	To improve packaging of crackers.	Nil	Shortage of raw material.	Nil	Nil	Problem on quality control during processing

NA : Product not available

Nil : No problem indicated

erences quoted could be useful and would therefore like to collect them in our library for the reference of all member countries of SEAFDEC. However attempts by MFRD to collect the references from participating countries have been unsuccessful.

The colour photographs/slides received have helped to make the inventory more interesting. The compilers have tried to include all the photographs received except those which are not clear or did not highlight the contents of the survey.

### **Solutions To Problems Encounted And Improvements Of Co-ordination**

To overcome the above problems, the compilers hope that the coordinators will check the information returned by their respondents. Any changes should be carried out before the forms are returned to the compilers. This would make cooperation between the compilers and coordinators easier and faster. The receipt of more photographs and slides would be appreciated for inclusion in the inventory, in particular photographs of products popular in the country. It will be helpful to have the types of products or activities shown in the photographs indicated clearly to the compilers.

### **Deadlines Of Correspondences**

Respondents should keep to the time schedule as closely as possible. Arrangements should be made to avoid delays caused, for example by the absence of the coordinator on training or leave.

### **Concluding Remarks**

The first inventory was completed in 1987. This was followed by the second improved inventory in 1991. We hope that future compilations will continue to have additional improvements.

## INVENTORY OF FISH PRODUCTS IN SOUTHEAST ASIA

### PART I: COUNTRY CONTACTS

a) Name/address of co-ordinator: \_\_\_\_\_

\_\_\_\_\_  
Telephone: Cable: Telex: Fax:

Please answer all items. If information is not available, please indicate by 'N.A.'

b) Name/address of respondents [please indicate section(s) involved]

(1) \_\_\_\_\_

\_\_\_\_\_  
Telephone: Cable: Telex:

General statements may be given if estimated figures are not available; please indicate this by abbreviation 'Gen.'

(2) \_\_\_\_\_

\_\_\_\_\_  
Telephone: Cable: Telex:

When exact statistical figures are not available, estimated figures may be used; please indicate by abbreviation 'Est.' if figures are estimated.

(3) \_\_\_\_\_

\_\_\_\_\_  
Telephone: Cable: Telex:



**PART II: DETAILS OF PRODUCTS**

Name of Product				Description of product	References	Materials Used			Outline of processing methods
English name		Local name				Main materials	Cost per kg	Sub-ingredients	
List of machines used				Final Product					
				Packaging conditions		Storage Conditions (state method/temp.)		Shelf life	Ways of consumption
Production volume (mt)								Countries of destination (export)	Remarks on present/current problems in marketing & quality control
Production				Export					
1984	1985	1986	1987	1984	1985	1986	1987		