



**UNIVERSITI PUTRA MALAYSIA**

**AN ASSESSMENT OF MILKFISH MARKETING  
IN SEMARANG REGENCY, CENTRAL JAVA,  
INDONESIA**

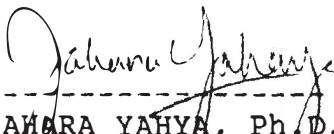
**MUDIANTONO**

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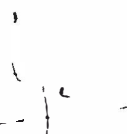
It is hereby certified that we have read this thesis entitled 'An Assessment of Milkfish Marketing in Semarang Regency, Central Java, Indonesia' by Mudiantono, and in our opinion it is satisfactory in terms of scope, quality and presentation as partial fulfilment of the requirements for the degree of Master of Science



-----  
ALANG P. ZAINUDDIN, Ph.D.  
Assoc. Professor/Dean of Graduate Studies  
Universiti Pertanian Malaysia  
(Chairman Board of Examiners)



-----  
JAHARA YAHYA, Ph.D.  
Associate Professor  
Faculty of Economics and Administration  
University of Malaya  
(External Examiner)




-----  
ZAINAL ABIDIN TAMBI, M.Econs  
Lecturer  
Faculty of Resource Economics and Agribusiness  
Universiti Pertanian Malaysia  
(Internal Examiner)



-----  
FATIMAH MOHD. ARSHAD, Ph.D  
Lecturer  
Faculty of Resource Economics and Agribusiness  
Universiti Pertanian Malaysia  
(Supervisor)

This thesis was submitted to the Senate of Universiti Pertanian Malaysia and was accepted as partial fulfilment of the requirement for the degree of Master of Science.

Date: 19 FEB 1987

  
ALANG P. ZAINUDDIN, Ph.D.  
Associate Professor/  
Dean of Graduate Studies.

AN ASSESSMENT OF MILKFISH MARKETING  
IN SEMARANG REGENCY, CENTRAL JAVA,  
INDONESIA

by

MUDIANTONO

A thesis submitted in partial fulfilment of the  
requirements for the degree of Master of Science  
in the Faculty of Resource Economics and  
Agribusiness, Universiti Pertanian Malaysia.

August 1985



Dedicated to:

my late mother, Komariyah

my father, Soekirman

my wife, Yuli Ratnawati and

my son, M. Danang Ratnanto



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## ABSTRACT

An abstract of the thesis presented to the Senate of Universiti Pertanian Malaysia in partial fulfilment of the requirements for the degree of Master of Science.

### AN ASSESSMENT OF MILKFISH MARKETING IN SEMARANG REGENCY, CENTRAL JAVA, INDONESIA

by

Mudiantono

August 1985

Supervisor : Fatimah Mohd Arshad, Ph.D.

Faculty : Resource Economics and Agribusiness

The milkfish (*Chanos chanos*) is one of the fishes best suited for culture in brackish water ponds. The culture of milkfish has been practised for several hundred years in Indonesia, particularly in Java island. At present, milkfish has become a popular food fish in Indonesia, especially in Java, and a major portion of them is marketed fresh, while the rest is marketed as processed milkfish.

This study evaluates the efficiency in marketing of milkfish in Semarang Regency, Central Java, Indonesia in terms of various significant dimensions such as market competition,



market integration and marketing margin. The structure-conduct-performance of the market approach is used to measure the marketing efficiency. This approach was developed in the United States as a way to analyze the market organization of the industrial sector, but it was later applied in the agricultural sector.

Results of analyses show that the market is efficient, although there are some considerations what should be noted. The market is at least consistent with competitive behaviour, except at the wholesale level. The degree of market integration is high as indicated by high correlation coefficients among county/municipality prices which also implies the existence of pricing efficiency in the markets. Marketing margin analysis indicates that producer's share from the retail price is high and profit margins to the wholesalers and retailers are reasonable. Yet, the marketing system harbours significant flaws particularly credit-tie and unfair tactics which somewhat deny the producers the full benefit of a competitive market. It appears that properly-managed producers cooperatives would be able to offer a fair and efficient marketing services to the producers.



## ABSTRAK

Abstrak thesis dikemukakan kepada Senat Universiti Pertanian Malaysia sebagai memenuhi sebahagian daripada syarat-syarat untuk mendapatkan Ijazah Master Sains.

### PENILAIAN KEATAS PEMASARAN BANDENG DI DAERAH SEMARANG, JAWA TENGAH INDONESIA

Oleh

Mudiantono

Ogos 1985

Penyelia : Fatimah Mohd. Arshad, Ph.D.

Fakulti : Ekonomi Sumber dan Perniagaan

Bandeng (*Chanos chanos*) merupakan satu daripada jenis ikan yang sesuai untuk ternakan dalam kolam ikan payau. Penternakan bandeng yang berpusat di Pulau Jawa telah dilakukan sejak beberapa ratus tahun lalu di Indonesia. Pada masa ini, bandeng telah menjadi ikan yang sangat popular di Indonesia, khususnya di Jawa. Sebahagian besar ikan ini dipasarkan sebagai ikan mentah dan bakinya dipasarkan sebagai ikan yang telah diproses.

Kajian ini bertujuan untuk menilai pemasaran bandeng di Daerah Semarang, Jawa Tengah, Indonesia dari beberapa segi dimensi yang nyata seperti darjah persaingan pasar, integrasi pasar dan selisih pemasaran. Pendekatan struktur-gelagat-prestasi pasaran telah digunakan untuk mengukur kecekapan pemasaran. Pendekatan ini telah



dipelopori dan digunakan di **Amerika Syarikat** sebagai satu cara untuk mengkaji organisasi **pemasaran dalam** sektor industri, tetapi sekarang telah digunakan pula dalam **sektor pertanian**.

Penemuan kajian menunjukkan bahawa pasaran hampir memenuhi ciri-ciri kecekapan walaupun terdapat beberapa gejala kelemahan. Pasaran didapati menunjukkan darjah persaingan yang berpatutan kecuali diperingkat borong. Darjah integrasi pasaran juga tinggi sebagaimana yang ditunjukkan oleh koefisien korelasi yang tinggi diantara kabupaten dan kotamadya. Analisis selisih pemasaran menunjukkan bahawa **sheer** pengeluar keatas harga runcit adalah tinggi dan margin keuntungan kepada pemborong dan peruncit adalah berpatutan. Namun begitu, sistem pemasaran menunjukkan kelemahan-kelemahan seperti pertalian kredit dan amalan tidak ethika yang menghindar pengeluar-pengeluar dari menikmati faedah pasaran persaingan dengan sepenuhnya. Dijangkakan bahawa koperasi pengeluar yang diuruskan dengan baik mungkin dapat menyediakan perkhidmatan yang saksama lagi cekap kepada pengeluar-pengeluar.



#### CONVERSION TABLE

1 hectare (ha.) = 2.471 acres  
= 10,000 square metres

1 kilogramme (kg.) = 1,000 grammes

1 kilometre (km.) = 0.62137 mile  
= 1,000 metres

Rupiah (Rp.) = Indonesian Currency  
(US\$ 1.00 = Rp. 1,050.00)  
(M\$ 1.00 = Rp. 440.00)

This rate of exchange was valid  
within the data collection of  
this study.



## CHAPTER 1

### INTRODUCTION

#### Background

The Indonesian economy is heavily dependent on the natural resources, of which agriculture constitutes an important element. The development targets with the highest priorities are agriculture, industry, mining and oil. The First Five Year Development Plan (REPELITA I) 1969-1973 up to the Fourth Five Year Development Plan (REPELITA II) 1984-1989, agriculture has been chosen as the central focus of development.

Fishery is one of the major sectors in agriculture, since Indonesia is a maritime country which consists of thousands of islands. The national fishery can be broken down into two main sectors: inland and marine. The marine sector can be further divided into large and small scales (Indo Pacific Fisheries Council, 1974:6). The brackish water pond is included in small scale (artisanal) marine fishery.

The brackish water pond operation is an important means of subsistence for people living in the coastal areas, such as in the north coast of Java island. Nowadays most brackish water pond operators have low standard of living, for various



reasons, of which low productivity and inefficiency in the existing system of marketing are considered to be the most important. As such, improvement in production as well as efficiency in marketing is to be given priority in development plans to augment the economic status of these coastal fish pond operators.

There are at present about 8,000 ha of brackish water ponds devoted to milkfish (*Chanos chanos*) husbandry in Semarang Regency. The average production was 4,000 metric tonnes per year during last five years (Central Java in Figure, 1983:257).

The culture of milkfish has been practised for several hundred years in Southeast Asia. Milkfish, valued for its high quality flesh, has become a popular food fish in Philippines, Taiwan and Indonesia. Producers of milkfish throughout Southeast Asia rely on the natural fry fishery for their ponds, since the milkfish neither reaches sexual maturity nor breeds in confinement in sufficient numbers to support hatcheries (Smith, 1981:1).

The average size of ponds in Central Java was 1.7 ha, while the smallest size was one ha. Fifty nine percent of the milkfish ponds had a size of less than 2 ha. Seventy percent of the producers had their own ponds, and the rest were as tenants or work under the "share cropping" arrangement (Survey Report of Faculty of Economic Diponegoro University, 1974:6).



Generally, the milkfish are harvested twice a year from each pond at six-month interval. There are five different stages in milkfish production (Wiratno, 1978:22). They are:

1. Repairing and clearing the ponds.
2. Purchasing fry, and treating them in 5 meter squares nursery ponds and let them remain in these ponds for about 35 to 40 days.
3. Transferring fingerlings (fry of 35 to 40 days old) from nursery ponds into rearing ponds.
4. Treating fingerlings to a marketable size which takes 4 - 6 months.
5. After the harvesting time, ponds are idle, until fry are once more available and the cycle begins again.

The average production varies from one area to another, ranging from 2 - 8 quintal per ha per year.

Milkfish is regarded as a luxury side-dish because of its high price and good quality. It is generally consumed by the middle income group. For the low income group, it is considered a very expensive food item, and as substitute, they consume other fresh fish (usually fresh-water fish) or salted fish. On special occasion such as Chinese New Year and Feast Days, there is a large demand for milkfish. The larger size of them (2 or 3 pieces/kg) are consumed on these occasions, while for daily consumption, it is confined to the smaller sizes of 4 or 5 pieces/kg (Wiratno, 1978:114).



A major portion of the milkfish is marketed fresh, transported by pick-ups, trucks, or even carried by bicycle or by carrying bar. They are packed either with ice or in coolboxes. The longest distance between pond areas and the market is about 600 kms and it takes 10 to 12 hours to cover this distance (Wiratno, 1978:114).

The role of market intermediaries in the marketing of milkfish is crucial. They normally perform the three major functions of marketing, merchandising and financing simultaneously. To perform these functions require large working capital, particularly cash, to pay the producers and also to produce credits. Financial constraints have forced majority of the small milkfish producers to obtain credits from the market intermediaries; the repayment of which is mainly done by selling the next harvest to the creditors. Producers continuous compelling need of cash from season to season inevitably lead them to continue taking credits and then selling to their creditors. This continuous arrangements result in a strong credit-tie between the producers and the market intermediaries. Their small marketed surplus, irregular sale and limited knowledge on the market information merely weaken their bargaining power vis-a-vis their creditors or market intermediaries.

Up to now, there are only few studies on the brackish water pond operations in Central Java Province and particularly in Semarang Regency, and they seem inadequate as a basis for



sound policies to the government. Studies on the aspect of marketing is almost lacking. In this context, the present study is aimed at increasing more knowledge on the brackish water pond operations, stressing on the marketing aspect of milkfish as the major brackish water species.

The reason for emphasizing the marketing aspect is that, the policy makers are found, most of the time, to be tempted to go for production oriented development strategy alone, ignoring the market aspect of the products. Whereas, the existing market intermediaries that link producers to market when left undeveloped are bound to act as barriers to the development of the industry itself. Identifying marketing problems and opportunities for improving the performance of the marketing system consequently, is important in establishing programmes for the development of brackish water pond operations.

#### Problem Statement

In general the milkfish producers in Central Java, Indonesia depend on certain specific market intermediaries in selling their products. This dependence is created out of the existing credit link between the two groups (the producers and the market intermediaries). Generally, the producers who are financially hard-pressed, borrow money from the market intermediaries. Under such circumstances, the producers are obliged to sell their products to these lender-cum-merchandiser-cum-marketeer. As a result, transactions take

place in a situation of imperfect bargaining, and the market in which the milkfish producers sell their milkfish are, in fact, controlled by few buyers.

When the number of market intermediaries (the buyers in this case) are small compared to the number of milkfish producers (sellers), the former can always dictate the method of selling to their advantage. The market intermediaries can thus set the buying arrangements in accordance with the prevailing market situation (price situation) at the immediate market in which they supply these products. Consequently, the producer's share out of the total marketing margin becomes very low. Therefore, under the prevailing situation there exists inefficiency in the milkfish marketing.

When the marketing system has failed to furnish adequate coordination of economic activities to effectively link producers to markets, it is suggested that the marketing system has, in effect, acted as a barrier to the development of brackish water pond operations (Shwedel, 1977:7). Thus, identification of marketing problems and opportunities for improving the performance of the marketing system through the measurement of marketing efficiency becomes an important consideration in establishing programmes for the development of brackish water pond operations.



## Objective of the Study

The general objectives of the study are to evaluate and to provide recommendations to improve the marketing system. The specific objectives consist of:

- a) to trace the physical flow or the marketing channel of milkfish;
- b) to study the milkfish market structure, particularly at farm level;
- c) to understand the pricing methods employed by milkfish traders;
- d) to study and to compare the marketing margin of milkfish for each channel.

## Plan of Report

This chapter has described the general view of the brackish water pond and milkfish as a product that will be analyzed in the present study stressing on the marketing aspect.

Chapter Two describes the literature review related to this study. The aim of this chapter is to review the work on structure-conduct-performance of the market approach to measure the marketing efficiency of the agricultural products.

The methodology of this study which consists of theoretical framework, data collection and sampling procedures are presented in Chapter Three. The main advantage and



weakness of the structure-conduct-performance of the market approach to measure marketing efficiency are described. The method to collect data required is also described in this chapter.

Chapter Four describes the socio-economic characteristics of respondents. This chapter is divided into four sections. They are the distribution of respondents, capital used, organization, storage and transportation facilities, and market information owned by producers and market intermediaries.

The empirical results are presented in Chapter Five. This chapter discusses the structure-conduct-performance of the milkfish market in Semarang Regency. The market structure analysis consists of physical distribution of milkfish, market concentration and barriers to entry. The market conduct analysis consists of method of selling and market integration. The market performance analysis consists of marketing margin and functional analysis of marketing margin.

Finally, Chapter Six caps all previous chapters by offering conclusion and policy implications.