

RESOURCE PRODUCTIVITY AND PROFITABILITY OF
MILKFISH (*Chanos chanos*) CAGE CULTURE IN FIVE
COASTAL AREAS ALONG LINGAYEN
GULF IN PANGASINAN

ROSIE SALVADOR-ABALOS

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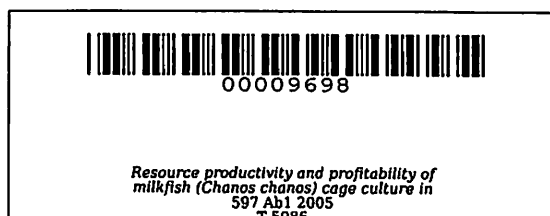
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✓ **RESOURCE PRODUCTIVITY AND PROFITABILITY OF MILKFISH**
(*Chanos chanos*) CAGE CULTURE IN FIVE COASTAL AREAS
ALONG LINGAYEN GULF IN PANGASINAN

ROSIE SALVADOR-ABALOS



**A dissertation submitted to the faculty of the Institute of Graduate Studies,
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ABSTRACT

ABALOS, ROSIE S., Institute of Graduate Studies, Central Luzon State University, Science City of Munoz, Nueva Ecija, Philippines, March, 2005, **RESOURCE PRODUCTIVITY AND PROFITABILITY OF MILKFISH (*Chanos chanos*) CAGE CULTURE IN FIVE COASTAL AREAS ALONG LINGAYEN GULF IN PANGASINAN.**

Adviser: RUBEN C. SEVILLEJA, Ph.D.

The productivity and profitability of milkfish (*Chanos chanos*) cage aquaculture production in five coastal areas along Lingayen Gulf in Pangasinan was conducted among 250 operators. The operators have an average age of 40 years and household size of six members. The individual operator had 1 or 2 units of cages. The operators have been engaged in cage culture for about four years and 70% of their income is derived from this operation.

Yields and profits generated by operators among the five coastal areas varied due to technological and management applications as well as differences in water quality.

Milkfish cage operation is a profitable enterprise with an average net profit of P368.60 per m³ and a rate of return of 165%. Cage, labor and capital provided high productivity values of P939.18/m³, P6.25/man-day, 332%, respectively. Feed conversion rate was 1.45.

The estimated Cobb Douglas production function revealed that milkfish cage production in Lingayen Gulf is explained by stocking density, amount of feeds, hired labor, length of culture period, and initial stocking weight of fingerlings. Water quality parameters such as dissolved oxygen and salinity also affected yield. Whereas, the profitability of cage culture is significantly affected by the amount of initial investment in cage facilities and the cost of fingerlings.

Milkfish cage operators have not maximized the use of inputs. Marginal analysis suggests that significant inputs especially stocking density, amount of feeds and hired labor should be increased at a certain level to maximize profit.

Results of the study indicate that there are greater opportunities for increasing production and income in milkfish cage culture. It is recommended that operators should balance their scale of operation and level of material inputs used. The yield models developed in each municipality could be used as guide to improve productivity and profitability of their operation. Existing operation and managerial practices in milkfish cage culture should be adjusted to maximize production and profit. Dissolved oxygen affects milkfish cage production, therefore, efforts to protect waters from deterioration should be enforced. The government and the community should join efforts to help maintain the quality of waters in the gulf. Moreover, support mechanism for wider dissemination of improved technologies in milkfish production should be put in place.

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INTRODUCTION

Background of the Study

Lingayen Gulf is a semi-circular bay that opens into the South China Sea. The coast stretches to 160 kilometers, bounded in the west by Cape Bolinao, and in the eastern part by Poro Point in San Fernando, La Union. The coast includes 18 municipalities and cities and 5 non-coastal municipalities with brackishwater ponds. The marine waters of Lingayen Gulf covers an area of 2,610 km² (LGCAMC, 1999).

The gulf is divided into three sectors by type of sea bottom (Mines, 1986). Sector I, starts from Silagui Island to Sual, which consists of hard coralline bottom substrates. Sector II, from Labrador to San Fabian, has soft silt and mud bottom. Sector III is characterized by sandy coralline bottom, which includes parts of San Fabian to San Fernando, La Union (Figure 1).

Lingayen Gulf is a major area for capture fisheries and coastal aquaculture in Northwestern Luzon. The area encompasses a total of 2,205 hectares of rich fishing grounds teeming with about 1,711 species of fish. The gulf provided about 1.5% of the country's fish supply (BFAR, 1996). From 1980 to 1984, the Gulf was reported to have an average annual catch of 2,000 metric tons for trawlers and 6,000 metric tons for small-scale fishermen (McManus *et al.*, 1992).

The introduction of milkfish cage farming along the coastal areas of Lingayen Gulf was a result of research and development efforts conducted by the Department of Agriculture. The profit generated from this aquaculture enterprise has attracted the