



**UNIVERSITI TEKNOLOGI MARA
EXECUTIVE MASTER OF BUSINESS ADMINISTRATION**

APPLIED BUSINESS PROJECT – MBA795

**FORECASTING MODEL FOR PRODUCTION VOLUME
AND SALES OF RED TILAPIA:**

**A Case Study On Pertubuhan Peladang
Kawasan Engkilili/Lubok Antu**

ADVISOR: ASSOC. PROF. DR. AZAMI BIN ZAHARIM

Prepared By:

AWANG MENTALI B. AWG. MOHD. SULAIMAN	2001394848
BOBBY WILLIAM	2001394885
HAWA HAJI NAHAR	2001395110
HJ. MORSHIDI ABANG	2001395009
LUKE SAKALAI JAMES JABING	2001394935
SITI AIDA ROSMARYANTI YAHYA	2001395128

EMBA 2001/2002

UiTM KAMPUS SAMARAHAN SARAWAK

DATE SUBMITTED: 14 DECEMBER 2003

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ABSTRACT

Pertubuhan Peladang Kawasan Engkilili / Lubuk Antu (PPKELA) is an organisation dealing with production and marketing of various agriculture products in the Lubok Antu District. One of its major activities includes Red Tilapia cage culture at Batang Air (Hydro Dam) located in the Second Division of Sarawak located in the Second Division of Sarawak.

Two major concerns on the success of this project are the high production cost and low sales of fish. A case study was initiated for PPKELA to identify economic production volume and the sales (RM) for Red Tilapia cage culture. The forecasting technique and model used includes decomposition, time series and ARIMA. The package used to model and forecast this project is MINITAB Version 11 programs.

Data on the volume and sales was obtained from 1998 to 2002 records of the organisation, which consisted of 60 month data set. Forecasting is done from the 54th month to the 66th month. Forecasting tasks was based on the five steps as recommended from the book “Forecasting: Method And Application – 3rd Edition. The steps are as follows:

- Step 1 : Problem definition
- Step 2 : Gathering information
- Step 3 : Preliminary (exploratory) analysis
- Step 4 : Choosing and fitting models
- Step 5 : Using and evaluating a forecasting model

1.0 INTRODUCTION TO THE PROJECT

1.1 The Project

The EMBA 03 team consisting of six- (6) students proposes a strategic planning project aimed at improving the supply chain at PPKELA. The proposal has been undertaken in response to a request by PPKELA as a result of large stock of costly inventories that is kept and uncertainty of sales (actual demand). By forecasting the production and sales volume it is possible to provide the organisation a mean to determine the economic volume of production and also to improve on their sale profit. This paper is aimed to present a model for PPKELA in their social obligation in assisting the local farmers.

1.2 Objective of the project

- (i) To forecast PPKELA's tilapia production and sales volumes. Forecast of economic production forecast is of utmost importance to determine how much inventory is needed, how many product to produce and to meet forecasted sales needed. This in turn determines the level of inventory that will be needed so that product can be delivered on time. Without accurate forecasts, large stocks of costly inventory must be kept by the uncertainties of sales (customer demand). This objective is carried through various application of forecasting model of production and sales volume;
- (ii) To forecast PPKELA red tilapia production and sale volume so as to determine the replenishment rate.
- (iii) To determine the equilibrium of price and versus various production volume i.e at the lower bound per kg at RM6.50, average per kg at RM 7.75 and upper bound per kg at RM 9.00

The proposal seeks to forecast the production volume and actual demand (sales) by application of forecasting technique available for meeting the organizational forecasting requirement and various forecasting tools to measure forecasting accuracy.

2.0 AREA FARMERS' ORGANISATION ENKILILI/LUBOK ANTU

The Area Farmers' Organisation Engkilli/Lubok Antu (PPKELA) was incorporated in 1987 with the aimed to upgrade the social-economic of their members. The headquarter office is strategically located at Engkilili to serve 3,365 members from 4,750 farm families. Our mission is to deliver consistently high quality and valued products to our customers and members.

2.1 Farmers' Organisation

Farmers' Organisation is an organisation established to be owned, controlled, managed and monitored by farmers under the Farmers' Organisation Authority Act 1973 (Akta Pertubuhan Peladang 1973) and Farmers' Rules and regulation 1973 (Peraturan-peraturan Peladang 1973) and Farmers' Organisation Rules and Regulations 1983 (Peraturan-peraturan Pertubuhan Peladang 1983).

Presently, Farmers' Organisation in Sarawak is still receiving the assistant from the government under the State Ministry of Agriculture and Community Development which is responsible for formulating policies on the development of the inland fisheries sub-sector in the State. The Inland Fisheries Division that is a component of the Sarawak Department of Agriculture is responsible for implementing these development policies.

Presently Farmers' Organisation is still under the care of or being supported by government with the view to improve their socio-economic status and welfare of its members.

Farmers' Organisation was first known as Farmers' Societies under the Farmers Societies Act in 1963. In 1973, when Farmer's Organisation Authority Act was approved, all Farmer's Societies was revised to Farmers' Organisation.

Farmers' Organisation in Sarawak begins with the creation of Farmer Society Stumbin/Bijat in 1972. With the approval of Farmer Organisation Authority Act it is change to Areas Farmer Organisation Batang Lupar. To date there are 28 Areas Farmer Organisation (Pertubuhan Peladang Kawasan) with one State Farmers' Organisation (Pertubuhan Peladang Negeri) in Sarawak.