

CHAPTER I INTRODUCTION

1.1 Background

One of the most significant and widely cultivated species of freshwater fish in Timor-Leste is tilapia. based on fishery service data, fish consumption in 2020 is 5.1 kg and 2021 6.10 kg, this shows that the level of fish consumption per capita per year in Timor-Leste is still very low, where this figure is still very low compared to Indonesia, as well as aquaculture management. Tilapia in Timor-Leste is currently very lacking.

The Maubara Institute of Fisheries and Aquaculture is the first national institute of fisheries and aquaculture in Timor-Leste which was established in 2016 and operated in February 2018, since operating in 2018 until 2021, the Institute of Fisheries and Aquaculture has distributed tilapia fish fry as many as 244,313 tilapia to 336 cultivation groups and cultivation communities (individuals) in 12 districts (NIFA, 2021) . The National Institute of Fisheries and Aquaculture, Maubara is geographically located at 125°15'54.9" East Longitude and 8°36'27.1" South Latitude, Vatuvou Village, Maubara Sub-district, Liquiça District, and has an area of 10 ha which is currently used as a hatchery, rearing pond, dormitory, main office, training room.

Environmental factors in cultivation are the main factors that need to be considered so as not to cause harm to the surrounding community. Environmentally friendly cultivation is the activity of breeding fish without damaging or disturbing the surrounding environment. The needs of the aquaculture industry are demanded to be environmentally friendly so that various technologies are used by cultivators to minimize aquaculture waste. Technology that can be used by farmers to minimize feed waste or process it.

One of the supporting factors in the success of tilapia cultivation is the availability of feed. Feed is a supporting factor in fish cultivation, which is an important element to support fish growth (Little *et al.*, 2003) and (Eka, 2020) . The feed given to fish must contain enough complete nutrients to support fish growth

(Sihombing & Usman, 2018) . However, the constraint in fish farming is the cost of feed production which is too expensive, so to reduce production costs in intensive fish farming, it is better to use efficient feed so that the feed given to fish is appropriate. Efficient use of feed means the amount of feed, feeding schedule and method of feeding according to the needs and eating habits of the fish. Water quality, in addition to diet, is a significant element determining the growth and survival of fish.. Asmaini et al, (2020) stated that the growth of tilapia is a type of fish that has a fast growth rate and can achieve a much greater body weight and a fairly high level of productivity.

In the cultivation of tilapia (*Oreochromis sp.*) the availability of water quality (temperature, DO, pH) is one of the factors that determine success in fish farming (Monalisa & Minggawati, 2010) . Although tilapia is a type of fish that has a high tolerance for changes in the aquatic environment, the quality of water in fish ponds must be managed properly so that its growth remains optimal. water. Therefore, it is necessary to conduct research on the effect of water quality on the growth of tilapia (*Oreochromis sp.*) which is an element that plays an important role in fish growth.

1.2 Problem Formulation

Based on the research background regarding the effect of water quality on the growth of tilapia, several problems were formulated as follows:

1. To determine the strength of the correlation among temperature and fish growth efficiency
2. To determine the strength of the correlation among pH and fish growth efficiency
3. To determine the strength of the correlation among DO and fish growth efficiency
4. How are the tilapia's length and weight correlated to their growth pattern?

1.3 Objectives

Some of the objectives to be achieved from this research are as follows:

1. To analyze the correlation between temperature parameters and fish growth;
2. To analyze the correlation between pH parameters and fish growth;
3. To analyze the correlation between DO parameters and fish growth;
4. To determine the performance of the relationship between fish growth patterns during the study.

1.4 Benefit

The benefits of this research can provide information to:

1. National Institute of Fisheries and Aquaculture Maubara as new research on the quality of water used for fish farming.
2. Marine and fisheries students at several universities in Timor-Leste.

1.5 Framework

Tilapia is a type of freshwater fish which is quite a favorite among the wider community. In addition to containing protein that is good for the fish's body, tilapia is also easy to cultivate in intensive ponds and can survive in changing environmental conditions. One of the factors that affect the growth of tilapia besides feed, water quality factors such as temperature, DO, pH and brightness are factors that affect the behavior and growth of fish. The research framework can be seen in Figure 1.

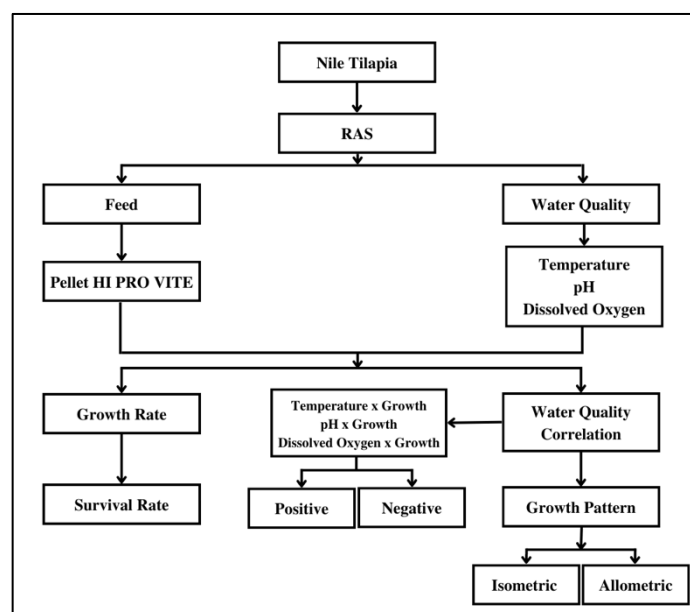


Figure 1. Researcher's Framework

