

# CHAPTER I

## INTRODUCTION

### 1.1 Background of the Study

In the last 50 years, Southeast Asia's fishing industry has boomed, especially in the Indian and Pacific Oceans. However, this growth has resulted in catching fewer fish per trip due to overfishing and harmful methods. Efforts to address this, like empowering local communities and better ecosystem management, face hurdles such as illegal trading and unequal fishing capabilities. In places like Nusa Tenggara Timur, where poverty rates are high, harmful fishing practices persist due to a focus on profit, hindering foreign investment and worsening poverty and environmental issues.

Enter the plant-based fish flakes analog specifically engineered for the marine environment. By harnessing the inherent qualities of plant-derived ingredients, this product emerges that not only replicates the taste and texture of fish but also offers respite to our oceans from burgeoning exploitation (Ramenzoni, 2013).

Using fish substitutes rather than traditional meat might mitigate adverse environmental impacts and enhance public health. This alternative aim to emulate the sensory properties and satisfaction of animal meat. Plant-based fish flakes analog have the potential to revolutionize conventional protein sources by providing more affordable, environmentally friendly, and animal-friendly products (Arora et al., 2023). There are various plant-based ingredients that can be used as a meat substitute, breadnut is one of them.

Breadnut (*Artocarpus camansi*) is a type of woody plant with hard, spiky fruit. The fruit resembles breadfruit but has seeds and more prominent spikes. Breadnut is a type of vegetable fruit that can be found in markets but isn't widely recognized. It tastes delicious when cooked and has a firmer texture than young jackfruit and breadfruit, with a stronger aroma. Typically, young breadnut is cooked as a vegetable dish. Besides being used as a vegetable,

breadnut can also be an alternative ingredient for making meat substitute dishes like fish flake analog (Setyawan, 2022).

Breadnut, with its high fiber content of 2.3%, presents a valuable alternative for fish flake analog production. The significant fiber content in breadnut not only boosts its nutritional profile but also enhances its functional properties in food processing. Incorporating breadnut into fish flake analogs caters to the increasing demand for plant-based alternatives and supports dietary trends emphasizing fiber-rich foods. This innovation offers a nutritious, sustainable option, reducing reliance on traditional fish products and contributing to environmental conservation efforts (Abdullah et al., 2020).

The process of producing a fish flake analog from breadnut involves boiling, baking, and marinating. Boiling is a critical step as it serves to eradicate microorganisms and soften the breadnut flesh. Subsequently, baking is employed to create a dry outer shell, effectively replicating the texture of a fish flake. The boiled and baked breadnut is subsequently marinated overnight in a *nori* and *kombu* stock to impart a fish-like flavour.

## **1.2 Objectives of the Study**

The objectives of this study are the following below:

1. To reduce pressure on overfished marine populations by utilizing the breadnut, an abundant and underutilized plant resource, as a primary ingredient.
2. To create a cost-effective and versatile ingredient suitable for various culinary applications.