Journal for the Agriculture, Biotechnology and Education, 4(2), 25-35, August 2024
e-ISSN: 2754-7825
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Research Article

The process of producing Paedrew Giant seabass with the participation of farmers to register for geographical indication

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Article Info

Received: 10 July 2024
Accepted: 22 August 2024
Online: 30 August 2024

Keywords
Process of producing Giant seabass
Paedrew Giant seabass
Register for geographical indication

Abstract

The research aims to study and compile the production process of PaedRiew Giant Sea Bass with local farmers and analyze this process in preparation for Geographical Indication (GI) registration. The study focused on 29 groups of giant sea bass farmers in Bang Kluea Sub-district, Bang Pakong District, Chachoengsao Province. A participatory approach was employed to understand the production process, including ecological concepts and practical techniques for cultivating giant sea bass. Data were collected directly from the production areas, and the information was presented using visual flow diagrams, accompanied by detailed descriptions. The findings highlight that the giant sea bass farming group in Bang Kluea is characterized by advanced aquaculture techniques, expert farm management, superior fish breeds, and high-quality water. These factors enable year-round farming of giant sea bass, which typically reach 5-8 kilograms after 18-20 months, due to the unique salinity conditions of the Bang Pakong River. In contrast, other areas can only raise smaller white snapper (700-900 grams) within 4-5 months. The Chachoengsao group practices a comprehensive farming process, from breeding to growing fish to giant size, ensuring high survival and growth rates. The fish produced are known for their large size, firm and chewy texture, high nutritional value (rich in omega 3 and 6), and absence of fishy odor, thanks to a specialized bleeding technique called "Ike-jime," adapted from Japanese practices. This technique maintains the freshness and quality of the fish, resulting in white, clear flesh with a good texture. Additionally, the fish exhibit a rainbow-colored sheen due to a curing process that integrates fat into the flesh. The entire production process is divided into three main stages: the production of white snapper fry, raising the fish to market size, and growing them into giant sea bass. Throughout each stage, there is a strong emphasis on maintaining high standards of quality, which is crucial for meeting the criteria required for GI registration. This comprehensive approach not only enhances the product's market value but also positions PaedRiew Giant Sea Bass as a unique and high-quality product suitable for both local and international markets.

To cite this article

Deeying, S., and Raumchimplee, T. (2024). The process of producing Paedrew Giant seabass with the participation of farmers to register for geographical indication. *Journal for the Agriculture, Biotechnology and Education, 4*(2), 25-35. DOI: https://doi.org/10.5281/zenodo.13689632

Introduction

Giant seabass has key breeding areas in the provinces of Chachoengsao, Surat Thani, Nakhon Si Thammarat, Pattani, and Songkhla, which together account for 62.10% of the total farming area, 56.44% of the total number of farms, and 77.03% of the total aquaculture production (Department of Fisheries Policy and Strategic Development, Department

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of Fisheries). Giant seabass is an economically significant fish that can be bred and raised in earthen ponds in both brackish and saltwater environments. Nearly 100% of the seabass sold in the market are farmed, with a typical market size known as "plate-size seabass" weighing approximately 700-900 grams. However, the giant seabass of Chachoengsao Province, known for its larger size of 5-8 kilograms, is particularly distinctive. This variety has firm, thick flesh, a delicious flavor, a fresh scent, high Omega content, and is free from any fishy odor. The product is available year-round, which sets it apart from seabass in other provinces.

Additionally, giant seabass in Chachoengsao Province is exclusively bred and raised locally from juvenile to adult stages. This uniqueness has driven the farmers to seek Geographical Indication (GI) registration for giant seabass as a provincial specialty product. GI registration would standardize the product, build consumer confidence, and highlight its unique characteristics, ultimately increasing farmers' income through the sale of a distinctive and standardized product in global markets.

The GI registration process requires comprehensive preparation, including geographical and biological information, production factors, and management processes. Farmers and stakeholders must be involved in every step to emphasize the importance of participation in preparing for GI registration. For giant seabass farming, this includes planning, pond preparation, broodstock selection, fry release, feeding, sorting, and harvesting. It is essential to support and validate these practices with scientific data to confirm the unique identity of Paet Rio giant seabass and prepare for its GI registration

Objectives

- To study and compile the context of the Paet Rio giant seabass production process in collaboration with farmers.
- To analyze the Paet Rio giant seabass production process in preparation for Geographical Indication (GI) registration.

Research Framework

The study of the participatory management process for the production of Paet Rio giant seabass by farmers will be conducted under the theories and concepts related to giant seabass production. This will be linked with the preparation of information for GI registration in Thailand, with an emphasis on participation. The study will collect comprehensive data related to 1) seabass fry production, 2) raising seabass to market size, and 3) raising seabass to full-grown giant size, with the aim of identifying the unique geographical indications of Paet Rio giant seabass. The conceptual framework is summarized as follows:

Giant sea bass farming is a unique area with distinctive farming characteristics, this led to farmers' demand to upgrade the giant seabass to become a provincial product by requesting registration as a Geographic Indication (GI) product to become a standard product, build confidence among consumers who are interested in products with special features, it is unique, which will lead to increased income for farmers from selling unique products and standard products that will lead to trade in the world market, which the application for GI registration must have a process for preparing all-around information, both geographic information and biological information of the area, production factors, production management processes to obtain comprehensive and important information in preparing for GI registration.

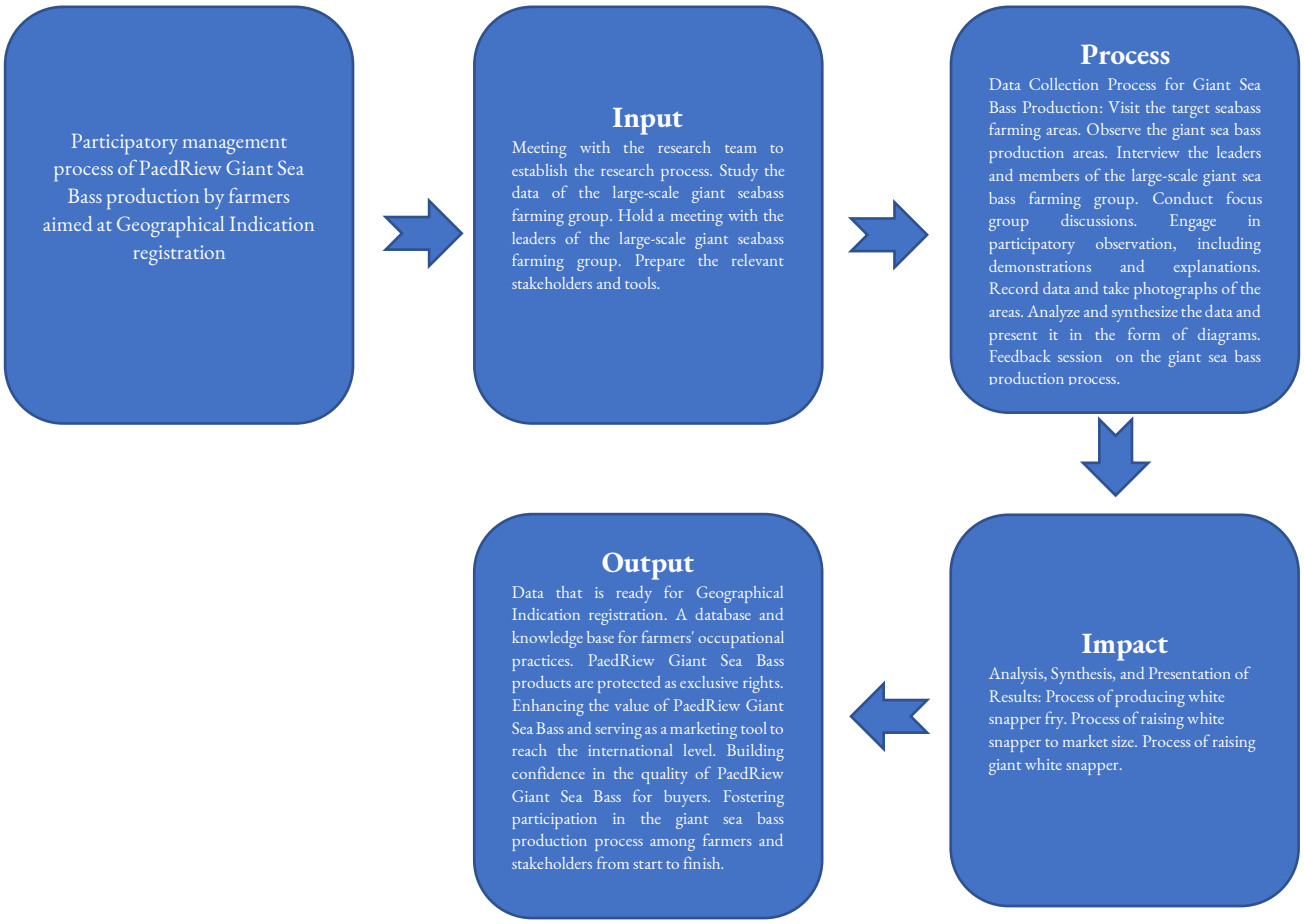

Figure 1. The participatory management process of PaedRiew Giant Sea Bass

Research Methodology

Population and Sample Group

The population consists of giant seabass farmers in Bang Pakong District, Chachoengsao Province.

The sample group includes a network of 29 large-scale giant seabass farmers in Bang Kluai Subdistrict, Bang Pakong District, Chachoengsao Province.

Research Instruments

The research instruments for this study include participatory spatial analysis of the giant seabass production process and the application of the Ecosystem Approach to Aquaculture (EAA) for giant seabass farming. Data collection tools include direct observation of production areas, photography of the production process, and the presentation of the data in the form of process flow diagrams, which serve as the primary medium for presenting the findings, along with descriptive explanations of each diagram.

Research Procedure

The participatory production management process for giant seabass farming in Paet Rio, aiming for Geographical Indication (GI) registration, involves the following steps:

Step 1. Preparation before studying the giant seabass production process.

Step 2. Data collection in the production areas of giant seabass.

Step 3. Data compilation, analysis, and presentation.

Step 4. Presentation and feedback of the giant seabass production process data.

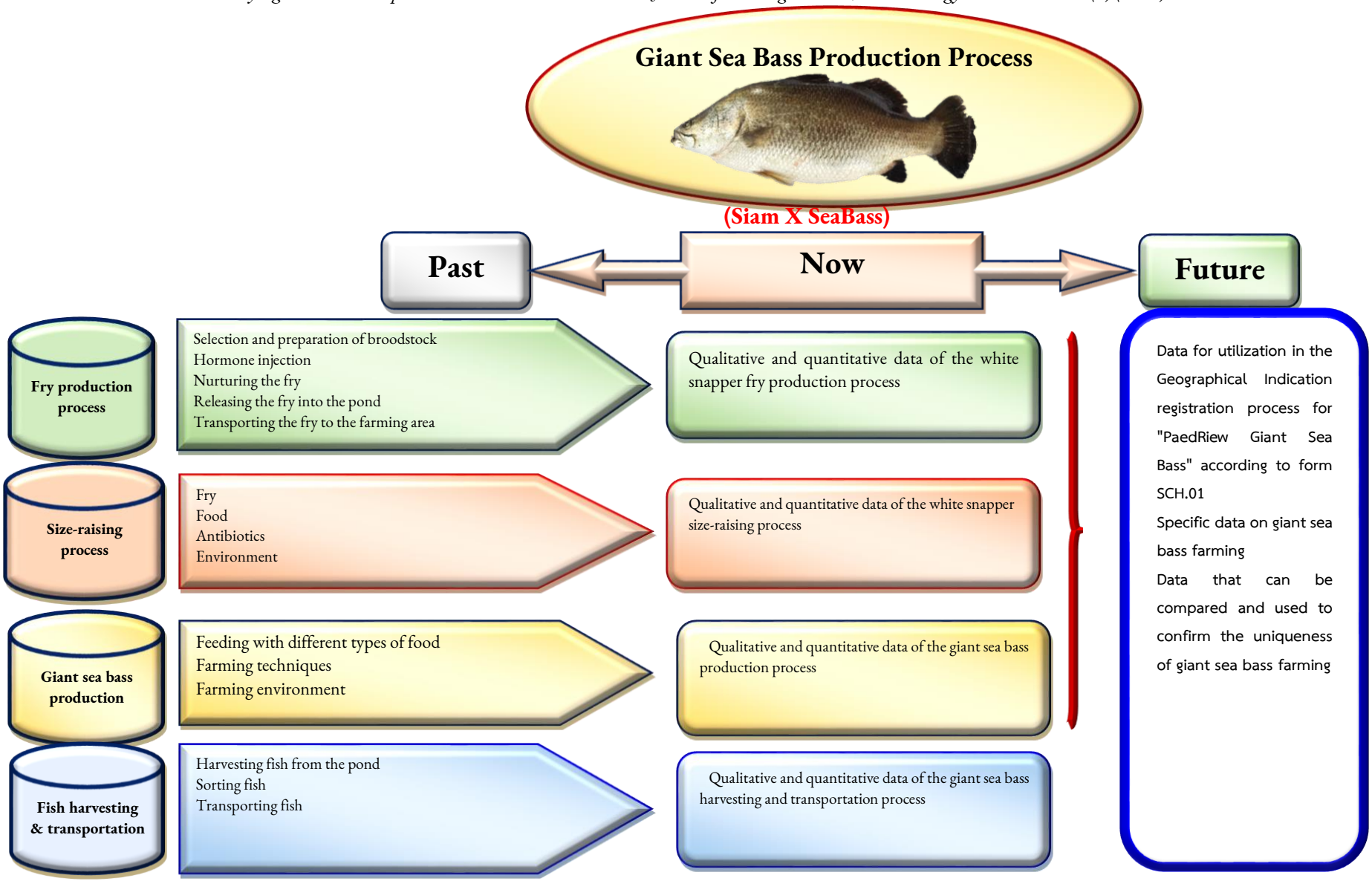

Figure 2. Research plan for the participatory production process of PaedRiew Giant Sea Bass by farmers aimed at Geographical Indication registration.

Research procedure

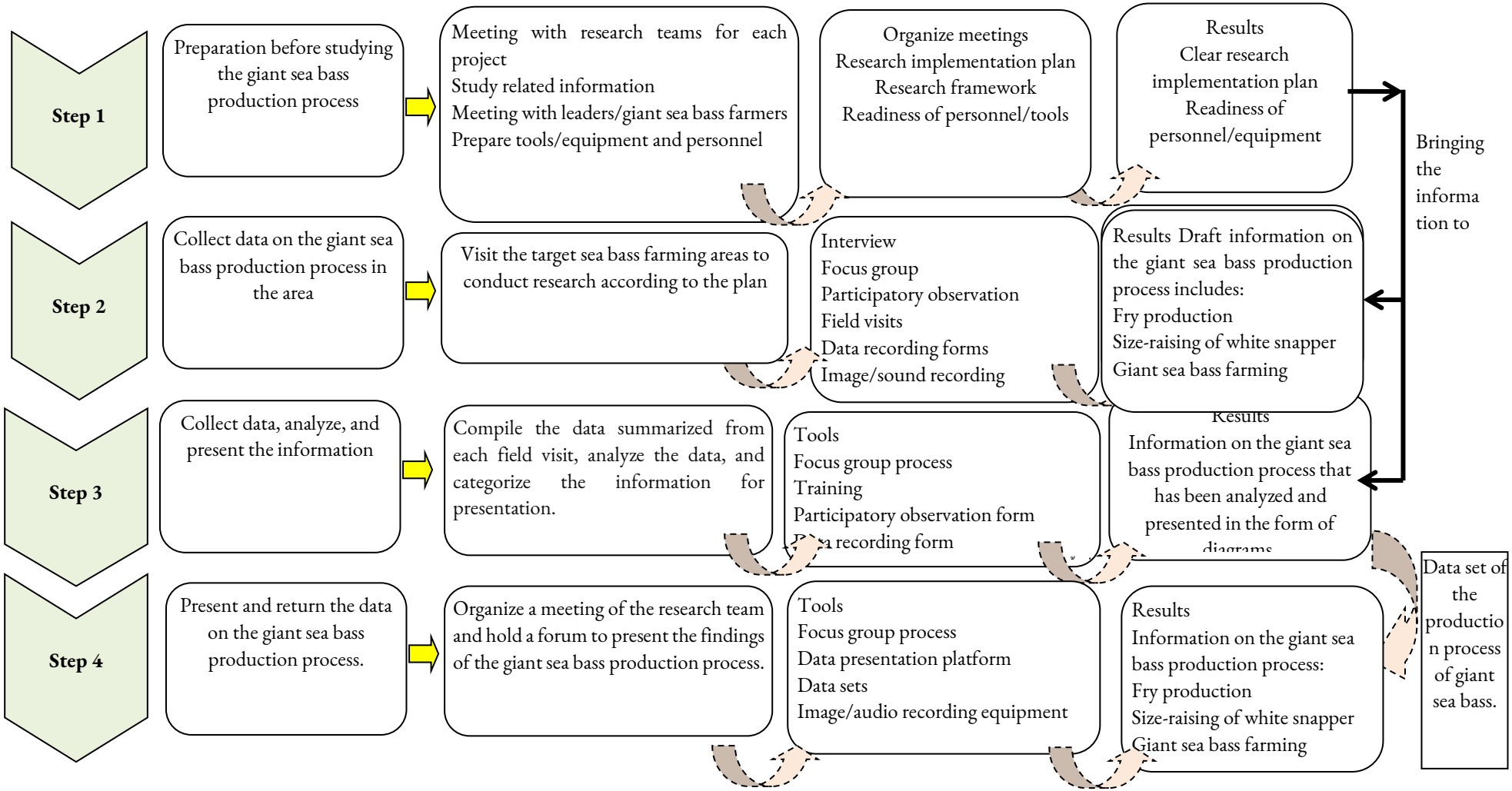

Figure 3. Research implementation steps

Research Findings

The giant seabass producer group in Bang Kluai Subdistrict, Bang Pakong District, Chachoengsao Province, is a large-scale enterprise consisting of 29 members. The group's strength lies in their advanced cultivation techniques, where the seabass farmers possess significant expertise, effective farm management, superior fish breeds, excellent water quality, and in-depth knowledge of rearing giant seabass. These key strengths provide them a competitive advantage over other regions that cannot sustain seabass farming year-round. The natural conditions in Chachoengsao Province, particularly the salinity of the Bang Pakong River, allow for seabass farming throughout the year. The farming process for giant seabass takes approximately 18-20 months, with the fish reaching a weight of over 5 kilograms, whereas in other regions, seabass farming typically produces smaller fish (700-900 grams) within 4-5 months.

The Bang Kluai group manages the entire seabass production cycle, from breeding to rearing the fish to their full size. The primary seabass breeding centers are located in Song Khlong Subdistrict and Tha Sa-an Subdistrict, both in Bang Pakong District, which are the largest seabass breeding areas in the region. The group includes breeders, hatchery operators, and those responsible for nurturing seabass from fry to full-sized fish. The resulting giant seabass exhibit several distinctive characteristics: 1) The fish are large, robust, with firm, white, and beautiful flesh that does not disintegrate during cooking and lacks a fishy odor. 2) They are highly nutritious, rich in Omega 3 and Omega 6, and contain brain-healthy nutrients directly sourced from natural water. 3) The fish have a delicious flavor, are fresh, clean, and free from chemicals, as no chemicals or antibiotics are used in the farming process. 4) The fish lack the typical fishy smell due to a blood-draining process, preserving the flesh's freshness and quality. 5) The filleted fish display a rainbow sheen (achieved by fat integration into the flesh, known as "aging"), resulting in tender, translucent flesh. 6) The scales are shiny and glossy, with the skin remaining white after descaling. The fish are long, with thick backs and firm flesh. The group has adopted the Japanese technique of “Ikejime” for bleeding the fish, which eliminates the fishy odor, preserves the flesh, and maintains a good texture. Additionally, the group employs unique processing techniques that enhance the flavor, sweetness, and texture of the flesh, resulting in a product with a distinctive rainbow sheen.

The production process of giant seabass in this region is divided into three main stages: 1) seabass fry production, 2) rearing the fish to a marketable size, and 3) raising the fish to their full giant size. Each stage is critical, starting with the preparation of broodstock, hatching, and nurturing the fry to produce high-quality seabass with good growth rates, high survival rates, and the appropriate size for farmers' needs. The process involves careful pond preparation, fry release, feed management, water quality control, harvesting of market-sized fish, and raising the fish to their full size as giant seabass. This comprehensive production cycle, from breeding to processing, ensures that the seabass produced meets high-quality standards, adding value to the product and enhancing the farmers' competitiveness in the market.

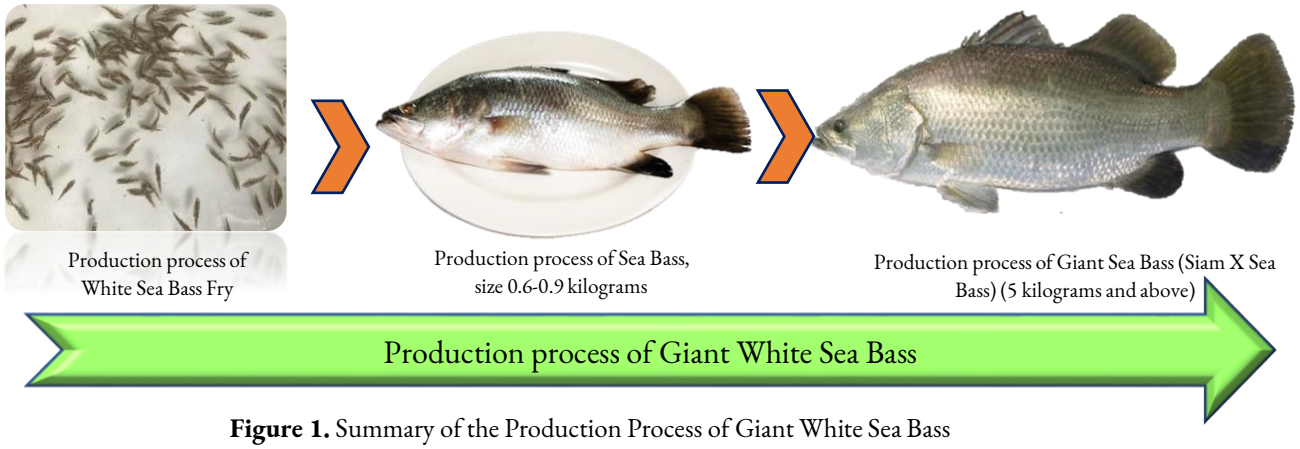

Figure 1. Summary of the Production Process of Giant White Sea Bass

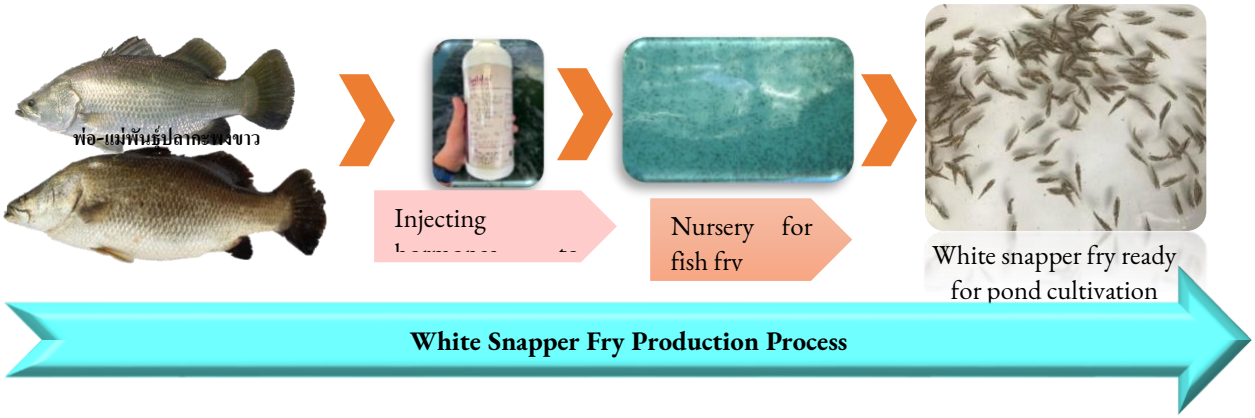

Figure 2. Summary of the White Snapper Fry Production Process

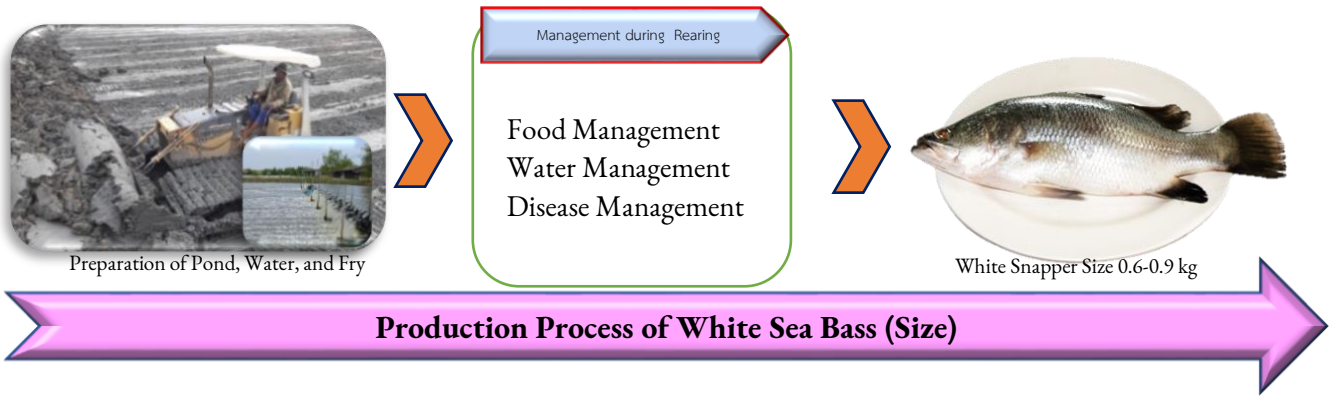

Figure 3. Summary of the White Sea Bass (Size) Production Process

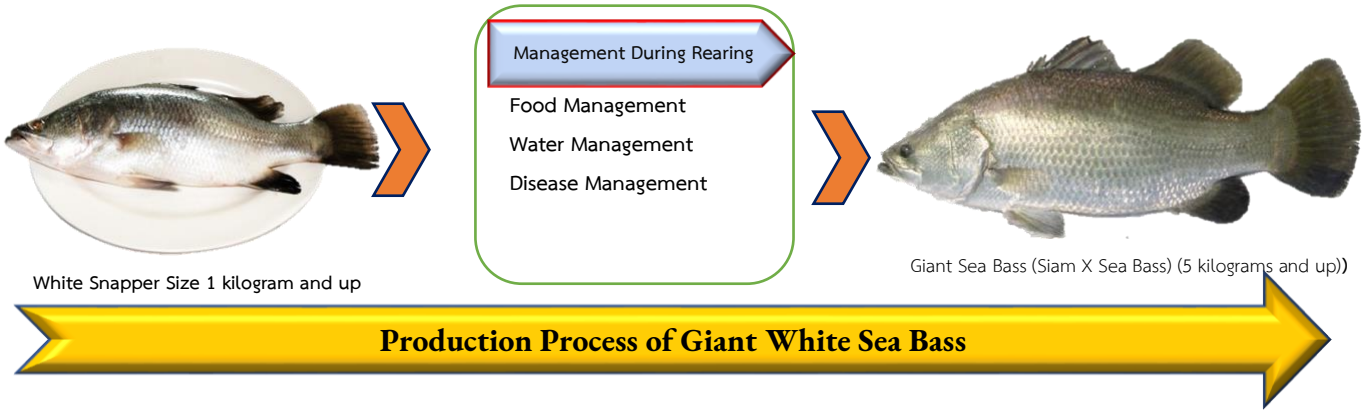

Figure 4. Summary of the Giant Sea Bass Production Process

Discussion and Conclusion

The key strengths of the giant seabass production by the producer group are rooted in the cultivation techniques. The seabass farmers possess significant expertise, effective farm management, superior fish breeds, excellent water quality, and substantial knowledge in rearing giant seabass. As a result, they produce giant seabass with the following characteristics: 1) The fish are large, robust, and strong with firm, white, beautiful flesh that does not disintegrate when cooked. The flesh is firm yet tender, does not break apart during cooking, and is free from any fishy odor. 2) The fish are highly nutritious, rich in Omega 3 and Omega 6, and contain nutrients beneficial for brain health due to the fish obtaining minerals directly from natural water sources. 3) The fish have a delicious flavor, are fresh, clean, and free from chemicals (as no chemicals or antibiotics are used in the farming process). 4) The flesh lacks any fishy smell due to the blood being effectively drained from the fish, maintaining freshness, white color, and preventing rapid deterioration. 5) The filleted fish exhibit a rainbow sheen (achieved by fat integration with the flesh, known as "aging"), resulting in tender, translucent flesh (weighing 1 kilogram). 6) The scales are shiny and glossy, with the skin remaining white after descaling (white and beautiful skin). The fish are long with thick backs (long and thick), and the flesh is firm (farmers believe this is due to the soil properties in the seabass farming area). Additionally, the producer group has adopted the technique of bleeding the fish, which effectively removes any fishy odor. The process, performed by skilled personnel using a method called “Ikejime” derived from Japanese practices for preparing fish for raw consumption, involves bleeding the fish through the gills. This technique eliminates any fishy odor, preserves the flesh for an extended period, and ensures the flesh remains white and translucent with a good texture. The processing of the fish is carried out using unique techniques by the farmers, resulting in flesh that is flavorful, sweeter, firmer, and exhibits a rainbow sheen (due to fat integration with the flesh, known as "aging"), a distinct characteristic of the giant seabass produced by the group.

The production process of giant seabass has been divided by the researcher into three stages: 1) the production process of seabass fry, 2) the process of growing seabass to a marketable size, and 3) the process of rearing seabass to become giant seabass. Each stage of the production process is critical, starting from the crucial steps of breeding and nurturing seabass fry, including the preparation of broodstock and the provision of food during the first 2-3 weeks after hatching. The majority of seabass used for breeding come from sources maintained by the Department of Fisheries. According to the Department of Fisheries (2001), the nurturing of seabass fry is divided into two phases: the first phase involves raising the fry from hatching until they are one month old, which is crucial for their survival. Subsequently, the fry are raised in cages until they reach a size of 3 centimeters or more, at which point they are ready for sale. The seabass fry farms are considered the primary production system in the large-scale giant seabass production chain, providing fry to members who require them, enhancing the efficiency of seabass farming. This system begins with nurturing the fry until they are ready for further farming, allowing members to farm throughout the year, reducing the time and improving the quality of farming for seabass farmers. The fish grow faster and are ready for sale more quickly. Since seabass have different eating behaviors from other fish, preferring fresh food and not eating leftovers, producers must understand this behavior to feed seabass correctly, which directly affects their growth. The Sriracha Fisheries Research Station (2003) noted that while feeding fish might seem simple, it actually requires an understanding of the principles, methods, and environmental changes in which the fish live, as well as the fish's habits and behaviors. These factors must be integrated to ensure that the fish eat well, make the most of their food, and minimize waste, as aquatic feed is a crucial factor in aquaculture production. The distinctive characteristics of giant seabass farming, unique to the area and reflective of the local identity, have led to a demand among farmers to elevate giant seabass as a provincial specialty product by registering it as a Geographical Indication (GI) product. This would establish it as a standard product, build consumer confidence in a product with unique characteristics, and increase farmers' income through the sale of standardized, unique products in global markets. The GI registration process requires thorough preparation of geographic and biological information, production factors, and management processes, with active participation from farmers and producers in every step to highlight the importance of collective involvement in the GI registration process.

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