

Potential for Exporting Vietnamese Fish Sauce

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Abstract

A culture's identity and spirit are both embodied in its fish sauce. Fish sauce is often seen by visitors as a distinctive feature of Vietnam. When it comes to their native food, Vietnamese people take great pleasure in their fish sauce, which they use in all of their meals as the "National Soul" flavor. This article will look into Vietnamese fish sauce exports as of right now, as well as market trends, the product's export orientation, the pros and disadvantages of Vietnamese fish sauce goods, and possibilities and problems in exporting fish sauce products to other countries. As a sample case study of Vietnamese fish sauce, Phu Quoc fish sauce is mentioned in the article. The research team uses the findings as a foundation to think through and suggest ways to increase the effectiveness of Vietnamese fish sauce exports.

Key words: Fish sauce, strength, weakness, opportunity, threat, potential, export, Vietnam

1. Raising the issues

In addition to meeting the demands of domestic consumers, fish sauce is now exported to several nations, providing opportunities for Vietnamese culture and cuisine to be shared with friends abroad and generating revenue for both the nation and enterprises. Vietnam's fish sauce business has encouraged the use of science and technology in recent years, guaranteeing production safety and cleanliness in addition to meeting worldwide market inspection criteria.

On the list of exporters to markets, Vietnam has 17 fish sauce production facilities, 17 of which, in accordance with current legislation, have good food safety ratings. The nation's average export of fish sauce makes up just 12.6% of its entire production. Out of this, the Asian market makes up over 54%, followed by Australia at over 18%, Europe at over 13%, and America at over 13%. In 2021, the total revenue from fish sauce exports was USD 28.53 million. (baochinhphu.vn, 2022)

Vietnamese culture and cuisine may now be promoted with friends abroad thanks to the export of fish sauce, which now meets the demands of both local and foreign customers. This article will examine the present state of Vietnamese fish sauce exports, market trends, and product export orientations. By doing so, it will be possible to assess the strengths and weaknesses of fish sauce products as well as the opportunities and threats associated with introducing them to the global market. Additionally, Phu Quoc fish sauce will be discussed in the paper as an example of a typical Vietnamese fish sauce case study. The study team uses the findings as a foundation to think through and suggest ways to increase the effectiveness of Vietnamese fish sauce exports.

2. An overview of Vietnamese fish sauce

Fish sauce

First, it's important to understand the differences between commercial and traditional fish sauce. Traditional fish sauce is essentially made using a pure, natural fish sauce production method. The components of the two varieties of fish sauce also differ at the same time. While modern fish sauce contains over 20 components, including taste enhancers, preservatives, water, anchovy essence, and fish, traditional fish sauce is mostly made of fish and salt. While traditional fish sauce relies mostly on fish components in the clean fish sauce production process, industrial fish sauce frequently uses flavorings to add taste. (giavinuocmam.com, 2022)

Industrial fish sauce is made in large quantities using contemporary technology and standards, blending various ingredients and flavorings to quickly make fish sauce that satisfies market demand. marketplace. In addition to meeting national food safety regulations, industrial fish sauce is prepared quickly yet still tastes well enough for most customers. (accgroup.vn, 2023)

Roles of fish sauce

Fish sauce is not only a common spice in Vietnamese cooking, but it also has flavor-enhancing, deodorizing, and cleaning properties. Fish sauce will be an excellent medication, particularly when used correctly. Fish sauce is a staple in American cooking, giving flavors a more appealing and delectable touch, although it is too common in Eastern cuisine. Oriental medicine also claims that fish sauce has a sweet and salty flavor. When used as a spice, it is beneficial to the digestive tract, diuretic, kidneys, and blood health. Fish sauce is also an excellent treatment for colds, windstrokes, cramps, constipation, stiffness of limbs, and anemia. (bachhoaxanh.com, n.d)

3. The reality of exporting Vietnamese fish sauce

3.1. An overview of the market

These days, fish sauce is a widely used dipping sauce product—not just in Vietnam and other Asian nations, but in many other places as well. The spread of Vietnamese cuisine to friends abroad and the cultural interference between several nations have greatly aided in the promotion of fish sauce manufacturing for export. Despite the great expansion potential, Vietnamese fish sauce exports are still not very robust. In addition to encouraging the use of science in fish sauce processing technologies, the Vietnamese fish sauce industry has several formidable rivals when exporting to other countries, particularly Thailand. (win-rd.com, 2022)

Over 54% of the world's fish sauce output is sold in Asia, 18% is produced in Australia, and over 13% is produced in Europe and America. The Ministry of Agriculture and Rural Development's most recent study states that there are presently over 4,200 fish sauce producing enterprises in Vietnam, with an expected 380 million liters produced on average in 2020. Vietnam has only made up 12.6% of the world's production of fish sauce that is exported. (win-rd.com, 2022)

3.2. Current status of export

With an annual revenue of over 20 million USD, Vietnamese traditional fish sauce is currently sold to more than 50 international markets. An estimated 180 million liters of fish sauce are consumed annually in the domestic market, of which around 30% is traditional fish sauce. (vatfi.org.vn, 2021)

Vietnamese fish sauce is starting to gain recognition as an export and is drawing interest from customers abroad. Compared to the third quarter of 2022, fish sauce exports increased significantly by 55.6% in volume and 32.8% in turnover to 5,279 tons, valued at \$8.4 million USD, in the third quarter of 2023. Vietnam's earnings from fish sauce exports in the first nine months of this year totaled more than 19.8 million USD (more than 480 billion VND), or 13.7 tons. This represents a 48% rise in volume and a 2.4% decline in quantity when compared to the same time the previous year. (innovativehub.com.vn, 2024)

The General Department of Customs reports that in August 2023, Vietnam's exports of fish sauce to Australia shown a robust resurgence. At a total value of 29.24 million USD, export output rose by 3.04% over the same time in 2022 and by 13.4% over the previous month. Vietnam's fish

sauce exports to Australia were 197.67 million USD in the first eight months of 2023; this is a decrease of 20.16% from the same period in 2022, but there is still room for growth. (innovativehub.com.vn, 2024)

One significant sector of the seafood business is Vietnam's export of fish sauce to Australia. However, the General Department of Customs reports that the number and value of fish sauce shipments to Australia decreased in the first seven months of 2023. Compared to the same time in 2022, the total amount of exported products was 23.5 thousand tons, valued at 169.4 million USD, a decrease of 23.1% in value and 16.7% in volume. (innovativehub.com.vn, 2024)

Box 1. Fish sauce from Phu Quoc "Reaching out to the ocean"

The first Vietnamese product to be granted protection of origin on EU markets is the well-known Phu Quoc fish sauce. The European Union (EU) designated Phu Quoc fish sauce as a national intangible culture in 2012, recognizing it as "Traditional crafts, folk knowledge" and making it a product protected by geographical indications. (moit.gov.vn, 2023) The first product from Vietnam and the ASEAN region to be granted formal protection as a geographical indicator and appellation of origin throughout all 28 EU member states is Phu Quoc fish sauce. Vietnam is the first country to receive EU recognition and protection. The term "Phu Quoc" can only be applied to fish sauce products that are manufactured, bottled, and supplied to the EU market provided they are produced on the Phu Quoc island district and fulfill certain quality criteria. This helps to avoid fake and counterfeit Phu Quoc fish sauce products in the European Union market by ensuring that customers purchase the appropriate goods with distinctive and authentic quality. The Ministry of Industry and Trade reports that sales of fish sauce products in this sector have increased to around 500,000 liters since obtaining EU protection. With this protected appellation of origin, not only has the quantity grown, but the selling price of Phu Quoc products, as attested by the appropriate Vietnamese authorities, has gone up by 30 to 50 percent, depending on the specific product kinds. Because of this, Vietnamese companies may expand their exports to other markets including the US, Australia, Japan, and Canada. (vantaisaigonphuquoc.com, 2024)

The manufacturing facilities of Phu Quoc have consistently seen significant growth in recent times, as evidenced by the following: between 2015 and 2019, the output of fish sauce climbed from 10.7 million liters to 12 million liters, while revenue went from 611 billion VND to 684 billion VND. The Phu Quoc fish sauce Economic Department has released figures showing that the selling price of the product is greater when exported than when it is consumed domestically. Specifically, the Korean market enjoys a 20–30% premium, the EU accounts for approximately 50%, and the US accounts for around 65%. (Huu Tuan, 2022)

Sources: Summary of the research team

3.3. Regarding the export market for Vietnamese fish sauce

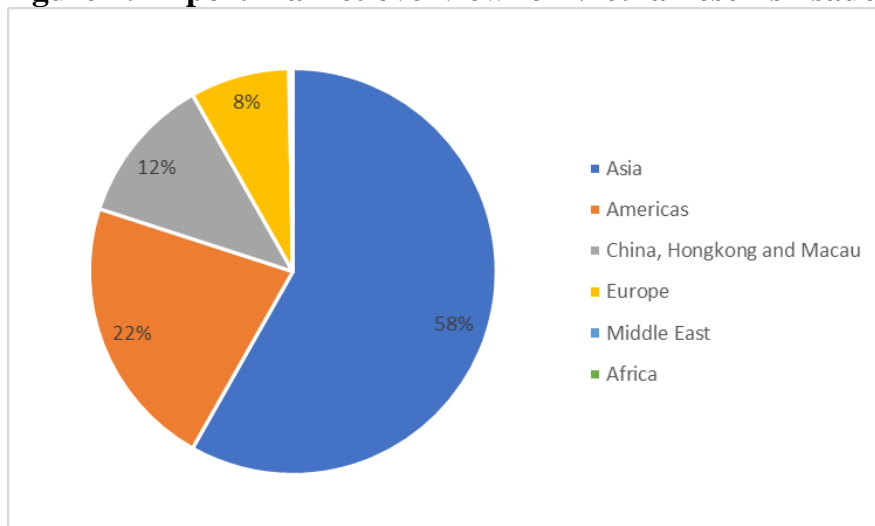
With expected sales of 5.9 million USD, or 20.9% of total turnover and a growth rate of 42% from 2020, the US is the Vietnamese fish sauce is the largest single market. More than 40% of this market has been accounted for by businesses alone. Top export value exports. Traditional-flavored fish sauces that are abundant in protein but not too fishy are still the most popular fish sauce exports from the US. (thegioihoinhap.vn, 2022)

Vietnamese fish sauce finds its second-largest market in Japan, where sales are expected to exceed \$4 million USD in 2021, or 14.1% of the total revenue. After Taiwan, this market had the

second-highest growth rate of the year. After being imported, the majority of fish sauce will be utilized as an ingredient in other meals, including functional foods. (thegioihoinhap.vn, 2022)

Fish sauce was worth around 3.1 million USD when it was sent to Taiwan, making up 11% of the overall export value. At an 86% growth rate in 2021, this is the market with the greatest growth rate. The value of fish sauce exports from other markets, including China, Cambodia, Hong Kong, and the Netherlands, is expected to expand by 30 to 40% on average in 2021. The European market, which includes nations like Germany, France, and Russia that are home to a substantial Vietnamese population, imported almost USD 2.2 million, or 7.9% of the overall turnover, with a growth rate of 14%. Even though the Thai market had a 2.7 million USD turnover, it shrank by 24%. (thegioihoinhap.vn, 2022)

Figure 1: Export market overview for Vietnamese fish sauce



Source: *thegioihoinhap.vn*, 2022

4. Using the SWOT approach to evaluate Vietnamese fish sauce's export prospects

4.1. Strength

Rich history and customs. For thousands of years, fish sauce has been an essential component of Vietnamese cooking. Both local and foreign customers have a great sense of confidence and devotion towards this product because of its long history and heritage.

Fish sauce is made in Vietnam throughout its 3,200 km coastline, which stretches from the point of Mong Cai to the tip of Ca Mau. Quang Ninh, Thanh Hoa, Nghe An, Khanh Hoa, Binh Dinh, Phu Yen, Binh Thuan, Kien Giang, and other provinces all contain unique species of raw materials that vary in flavor, fat content, saltiness, and deliciousness in addition to squash. Each location produces a unique kind of fish sauce that is incomparable to any other due to the decisions made by those regions. (vatfi.org.vn, 2021)

Superior natural components. Traditional fish sauce is generally made using fish that is high in protein, omega-3 fatty acids, and protein sources like mackerel and anchovies. Vietnam has a coastal strip that stretches more than 3,260 kilometers from north to south. Fish sauce-making towns are built on a foundation of rich and abundant seafood resources. Because of Vietnam's advantageous location, seafood is a plentiful supply of raw materials. The variety of fish and seafood offers excellent starting points for the creation of distinctive and premium fish sauce. Actually, there are several well-known fish sauce producing regions in our nation, including Phu Quoc, Nha Trang, Phan Thiet, and Phu Yen... (Minh Tuan, 2016)

Traditional production process. Vietnam has several age-old fish sauce production techniques that have been established and maintained through the years. The production process must go through several steps in order to create tasty, savory bottles of traditional fish sauce. Each

step is completed painstakingly and precisely, down to the last detail, and includes: Gather supplies; Selecting fish, marinating it in salt, combining salt and fish, incubating it, curing and drying; adding fish sauce and strain; verifying of quality; Filling bottles with fish sauce and screwing on the cap; packaging in a container. (Pham Linh, 2024)

Fish sauces made the old-fashioned manual way are still well-liked by many consumers and have developed into specialties in several areas. A distinctive flavor and consistent quality are produced by a natural fermentation process combined with old-fashioned processing techniques.

Food quality and safety. Vietnam's fish sauce sector is becoming more and more concerned with maintaining food safety and quality. To guarantee that goods satisfy high standards for quality and safety, manufacturers frequently use stringent quality control standards and processes.

A Coordination Action Plan was signed early on April 6, 2023, by the Vietnam Food Safety Science and Technology Association and the Vietnam Fish Sauce Association. This significant occasion signifies the two units' collaboration in improving food safety and cleanliness in the manufacturing and distribution of fish sauce. In order to serve state management agencies, public service units, and companies, the Vietnam Fish Sauce Association and the Vietnam Food Safety Science and Technology Association work together to enhance each other's capabilities so as to raise knowledge and standards among participants on legal requirements, standards, and food safety throughout the production, processing, and selling of food in general and fish sauce in particular; scientific and technological understanding of food, particularly fish sauce; bolster efforts to defend consumer rights and promote quality, cleanliness, food safety, and the fight against counterfeit goods. (nongnghiep.vn, 2023)

Technology development and management. The fish sauce production industry in Vietnam constantly applies new technology and improves production processes.

Vietnamese fish sauce business has been using science and technology to ensure food safety and sanitary requirements in their manufacturing process in recent years. At the moment, this product not only meets the demands of local customers but is also exported to other nations, providing opportunities to share Vietnamese culture and cuisine with friends abroad and benefiting both nations and enterprises. (nangluongsachvietnam.vn, 2022)

To increase output and product quality, maintain hygienic practices and safety throughout production, and satisfy consumer demands and exacting standards, manufacturers make investments in quality management and contemporary technology. worldwide.

4.2. Weakness

Fish sauce made traditionally contains histamines. Traditional Vietnamese fish sauce is valued for its great quality, although exporting it appears to be hampered by the International Food Standards Committee's (Codex) rules on the amount of histamine in fish sauce. Accordingly, the histamine level of traditional Vietnamese fish sauce is always high, ranging from 700 mg to 1,200 mg per liter. Conversely, the Codex standards set a low histamine threshold of 40 mg/100g of fish sauce; only industrial fish sauce, or diluted fish sauce, may fulfill this target. Traditional fish sauce production in Vietnam has been hampered by codex laws in recent years, which makes exporting extremely challenging. Traditional methods of producing fish sauce, such as distillation and concentration, include brewing, which yields high protein levels ranging from 10 to 40 degrees, and may even generate fish sauce with up to 60 protein. Only a few varieties of traditional Vietnamese fish sauce have been supplied to various nations recently due to this inappropriate legislation. Exporting Vietnamese fish sauce are not the greatest traditional fish sauces; they are simply a few varieties of low-protein fish sauce. While many nations across the world have stringent laws governing the amount of histamine in imports (Trang Nhi, 2022)

4.3. Opportunity

Regarding production scale. Vietnam has a wealth of natural resources and a long history of producing fish sauce. Fish sauce is produced throughout the majority of the coastal and delta areas in our nation. Van Van (now Cat Hai) of Hai Phong, Van Phan of Nghe An, Nam O of Da Nang, Tam Quan of Binh Dinh, Nha Trang of Khanh Hoa, Ca Na of Ninh Thuan, Lien Thanh of Ho Chi Minh City, and most notably Phu Quoc fish sauce of Kien Giang are just a few of the well-known locations and makers of fish sauce. Numerous companies enjoy widespread popularity not just in their home countries but also in numerous other nations. (thanhtra.com.vn, 2022)

As of 2020, Vietnam has about 4,200 fish sauce producing facilities, with an estimated 380 million liters of production on average. As of right now, Vietnam's export list to international markets includes 17 facilities for the manufacturing of fish sauce, and each of these establishments satisfies current regulatory standards for food safety. The Vietnamese fish sauce export business is dominated by these five production facilities: Masan Group; Unilever PLC; Thanh Hung Co., Ltd; Viet Phu Inc. (Red Boat Fish Sauce); Rayong Fish Sauce Industry Co. Ltd. (innovativehub.com.vn, 2024)

With 180 million liters produced annually, the Central provinces produce the most fish sauce; the South comes in second place with over 120 million liters produced annually, and the North comes in third place with over 80 million liters produced annually. (thanhtra.com.vn, 2022)

Box 2. The scale of fish sauce produced and exported from Phu Quoc

The Phu Quoc Fish Sauce Production Association now has 54 members who together hold 7,009 fermentation barrels. Of these, 8 firms have fleets of vessels that they use to extract raw anchovy materials, while 10 companies export both anchovy production and merchandise. buys 30–40 thousand tons a year, makes 20–30 million liters of fish sauce (made with at least 25 percent protein), and brings in 250–300 billion VND a year in sales.

Of the 54 members, 18 members placed geographical indication protection stamps on items, while 37 members enrolled for certificates of geographical indication protection. Numerous manufacturers have made investments in the construction of expansive facilities, automated production lines, state-of-the-art technology for quality control, and the promotion of consumption in North America, Europe, and certain Asian nations.

Source: Huu Tuan (2022)

Exports are expanding. Vietnamese fish sauce exports have increased significantly in recent years, broadening the market and enhancing its visibility abroad. Free trade agreements and export prospects present chances for fish sauce enterprises to grow. Vietnamese fish sauce is exported to numerous nations worldwide in addition to satisfying home demand, which helps to promote Vietnamese culture and food. In order to meet worldwide market inspection requirements and maintain safety and cleanliness throughout the production process, Vietnamese fish sauce business has implemented scientific technology. (innovativehub.com.vn, 2024)

The General Statistics Office reported that the average Vietnamese citizen uses around 3.9 liters of fish sauce year (Phan Hau, 2022). With Asia accounting for more than 54% of exports, Australia for more than 18%, Europe for more than 13%, and America for more than 13%, the ratio of fish sauce exports to the nation's overall output was around 12.6%. In 2021, the total revenue from fish sauce exports was USD 28.53 million. (innovativehub.com.vn, 2024)

Support from associations and craft villages. On October 27, 2020, the Vietnam Traditional Fish Sauce Association (VATFI) was founded with the goal of fostering connections, unity, and mutual assistance amongst traditional fish sauce producers, associations, and enterprises and executing initiatives with the following goals in mind: building brands, enhancing product quality,

protecting and advancing the material and spiritual qualities of fish sauce manufacturing, and growing both local and international markets. "Fish sauce is the blood of Vietnam, the taste of the Vietnamese homeland," is the Association's message to the people of the nation. (vatfi.org.vn, 2021)

The Ministry of Home Affairs granted permission for the establishment of the Vietnam Fish Sauce Association in Decision No. 610/QD-BNV, which was issued on September 3, 2020. The Vietnam Fish Sauce Association is an alliance of over 500 organizations and individuals that are committed to studying, creating, and advancing the "fish sauce" culinary culture of the Vietnamese people. They also aim to protect the environment while developing their production processes, meet consumer demands for quality, safety, and taste, and preserve the long-standing traditions of fish sauce production while fusing them with contemporary science and technology to make Vietnamese fish sauce globally renowned. (nhandan.vn, 2023)

In order to promote, safeguard, and boost the competitiveness and export of the Vietnamese fish sauce sector in the global market, *the Vietnam Fish Sauce Association* has actively assisted its members. In order to provide extremely relevant subjects and initiatives, the Association has partnered with scientific research units and organizations. From there, it aids companies that produce fish sauce in becoming more efficient, producing high-quality fish sauce products, and meeting technical specifications in accordance with global norms. (nongnghiep.vn, 2022)

4.4. Threat

Competition from other countries

Competitive price. Due to their cheap production costs and high-quality fish sauce products, other nations that produce fish sauce, such Thailand, Indonesia, and the Philippines, are also very competitive in the global market on the basis of pricing.

In terms of cost, Masan-Vietnam fixed the price of fish sauce around 10% higher than the going rate when it was first introduced to the Thai market. (cafef.vn, 2016)

Alternatively, Phu Quoc fish sauce items are more costly than those in Thailand. It goes without saying that pricing competition will be quite tough. The meticulous and expertly prepared Phu Quoc fish sauce is produced in relatively limited quantities—roughly 20 million liters annually—and makes up about 5-7% of all Vietnamese fish sauce produced. (congthuong.vn, 2023)

Quality and brand. Despite having a little market share relative to its potential, Vietnamese fish sauce is a fierce competitor in the export market.

Fish sauce is regarded as the foundation of Southeast Asian cuisine, not just in Vietnam. The two most well-known fish sauce-producing countries in the area are Vietnam and Thailand.

Thailand's state-of-the-art fish sauce manufacturing line, which satisfies both market-specific requirements and Codex criteria, has allowed it to rise to the top of the global fish sauce export rankings. A wide range of items that satisfy a wide range of tastes and preferences are also produced by modern manufacturing lines. This is the entry pass for this nation to rise to prominence in the fish sauce industry. (thuonghieuvaphapluat.vn, 2022)

Food quality and safety management.

+ *Comply with international standards:*

It is crucial to establish an international standard for fish sauce in order to facilitate commerce in the product and cater to the needs of the Asian population, which includes millions of Vietnamese expats. essential. Vietnam and Thailand collaborated to create Codex guidelines for fish sauce in 2000. 2011 saw the release of Codex stan 302-2011 Fish sauce by the Codex Alimentarius Commission. Nevertheless, the real-world implementation of Codex criteria reveals that traditional fish sauce still has a lot of drawbacks. This standard favors prepared fish sauce with minimal protein over traditional fish sauce with high protein and regional features, such traditional Vietnamese fish sauce. (kythuatchonghanggia.vn, 2022)

+ *Eliminate risks of food safety.* Reducing the possibility of germs, contaminants, and prohibited materials in fish sauce is a difficult task, particularly in light of the world's stricter food safety laws.

Eleven items of the Codex fish sauce standards outline precise requirements for product quality and food safety. This serves as the foundation for nations to use when evaluating the efficacy and safety of fish sauce as food, and it also serves as the legal foundation for determining whether a national fish sauce may be imported or exported. Unfortunately, most Vietnamese fish sauce products fall short of this need and fail to take the global market by storm. (thuonghieuvaphapluat.vn, 2022)

Climate change and environmental impacts. Impact on sources of raw materials: Variations in fish supplies brought on by climate change may drive up the cost of raw materials needed to produce fish sauce and jeopardize the industry's viability.

The fish sauce production sector cannot grow more and more sustainably unless it can guarantee the source of raw materials to continue the chain of production and processing. Fish raw resources are abundant but are beginning to dwindle as fish sauce is produced. As a result, maintaining aquatic resources must coexist with the production and use of fish sauce. (kinhtenongthon.vn, 2021)

The production of fish sauce is impacted by environmental pollution and climate change. Natural catastrophes including floods, droughts, and other calamities can interrupt production and supply networks, which can lower the output and lower the quality of fish sauce.

Owing to factors including marine pollution, climate change, declining fish populations, and diminishing fishing areas, fish sauce producers can face price increases as a result of competition from other buyers. (yup.edu.vn, 2018)

Food safety and hygiene concerns. There are several challenges in exporting fish sauce, particularly in terms of food safety, residue, and cleanliness. Vietnam must adhere to food safety rules and support flavor research in order to grow export markets for a variety of fish sauce varieties. Building a national brand and guaranteeing traceability records are two other significant concerns that the Vietnamese fish sauce business has brought up. (innovativehub.com.vn, 2024)

Industrial technology is not given much thought by many companies or industrial sites. In certain areas, there is still a lack of awareness regarding the use of management systems, international standards, and food safety and hygiene regulations ...

Scale of exports. Fish sauce export statistics shows that in 2020, the product's value only reached 23.45 million USD; however, by 2021, that value will have increased to 28.53 million USD, or around 12.6% of the entire yearly product production. The information indicates that even though this figure has grown annually, it does not accurately represent the industry's potential worth. (thanhtra.com.vn, 2022)

Box 3. Vietnamese fish sauce is difficult to export due to a lack of standards.

Phu Quoc fish sauce is extensively available in supermarkets, convenience stores, and retail establishments in the Hanoi market. According to a representative of the manufacturing plant, this brand is shipped to other nations. Eastern Europe, producing around 10,000 bottles annually. It is important to note that despite the product's high level of popularity in outside markets, a lack of standards prohibits higher export volumes.

The main benefit of Phu Quoc fish sauce is that it is protected as a geographical indication in Europe. However, due to strict regulations, it is very difficult to enter Europe through the official route. The biggest obstacle to the export of traditional Vietnamese fish sauce is the Histamine index.

Source: issq.org.vn (2017)

5. Solutions to improve the efficiency of exporting Vietnamese fish sauce

5.1. Market trend

The following fish sauce market trends have been identified by mordorintelligence.com (2024) in their investigation of the fish sauce market size and market share - growth patterns and projections (2023-2028):

The global market for fish sauce is being driven by rising demand from Southeast Asian countries and a growing need for fortified fish sauce. The main obstacle facing the fish sauce market is the ease with which substitutes may be found, as well as the expense and time associated with making the sauce.

Cambodians eat a lot of fish sauce. The government of Cambodia has acknowledged the increasing significance of food fortification as an effective approach to enhance the population's nutritional security. These nations have seen improvements in women's health as a result of the introduction of fish sauce supplemented with iron. Vietnamese consumers are more willing to pay for quality and safety. A number of recent food safety crises have led to a surge in demand for premium brand fish sauce.

Given that fish sauce is exported from Southeast Asian nations, distribution channels are crucial to the market. To sell these items, a reliable distribution route is required. There is intense rivalry in the market between the established brands of industrial and traditional fish sauce manufacture.

A large number of Asian nations, including China, Thailand, and Indonesia, manufacture industrial fish sauce that has been iron-fortified. Based on the bioavailability of minerals including iron, zinc, folic acid, and vitamin A, spices are a superior way to include micronutrients into dietary habits. The use of fortified fish sauce in regular and customized food offerings has been promoted by the expanding food service business in Vietnam, which includes full-service restaurants, cafés, pubs, quick food street kiosks, and 100% home delivery. This has helped to develop the market.

5.2. Orientation

Improve product quality

Create high quality fish sauce. To guarantee the highest quality of fish sauce products, invest in manufacturing methods and processing technologies. This includes employing the best ingredients, following defined processing guidelines, and enforcing stringent quality control.

Comply with international standards. To guarantee product acceptability in the global market, Vietnam should adhere to international food safety and quality standards like ISO, HACCP, and the technical requirements of destination markets.

Develop diverse products

Investigate and create novel varieties of fish sauce. Find and create new varieties of fish sauce that will satisfy the demands and tastes of expanding consumer markets. Fish sauces that are vegetarian, organic, or combined with other spices, for instance, could pique the curiosity of potential customers.

Increase investment in research and development. Spend money on research and development to increase the added value of fish sauce goods. This can be done by developing new and inventive products or by streamlining production methods.

Take advantage of trade agreements

Take advantages of the EVFTA and CPTPP. Utilize free trade agreements to lower trade barriers, improve market access, and open up new export markets for fish sauce, such as the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and the EU-Vietnam Free Trade Agreement (EVFTA).

Develop marketing and promotional strategies

Reach out to prospective customer bases. To reach prospective customer markets, such as those in Asia, Europe, and North America, invest in marketing and promotional methods.

Take part in global commercial exhibitions. Take part in international food shows, such as Fancy Food Show, Anuga Cologne, or SIAL Paris, to market your fish sauce brand and look for new business partnerships.

Build partnership relationships

Work together with regional distributors. Form enduring alliances with regional distributors in consumer markets to assist expand market reach and guarantee product availability on local shop and supermarket shelves.

5.3. Some proposed solutions

- State agencies, commercial and production companies, groups that promote fish sauce, and scientists must work together.

- Examine preferences and broaden export markets by offering a variety of fish sauce varieties. Products that are sold need to guarantee that they have full traceability records and comply with market standards on food safety. Increase your technological spending and use ISO 22000, HACCP, and HARPC quality control systems, among others. After that, progressively create a national brand for Vietnamese fish sauce in order to comply with food safety regulations and eligible for sale to markets including the US, Australia, and EU nations.

- Ensuring the source of materials for fish sauce is crucial in terms of both amount and quality. The idea that fish may be utilized to produce fish sauce even if it is ruined or cannot be frozen, dried, or watered has to be changed. Fish sauce manufacturing and processing require the modernization of factories, infrastructure, and storage facilities at the same time. Implement food safety and quality control initiatives when producing fish sauce.

- To make Vietnamese fish sauce appealing, research and investment are required to diversify product labels and packaging, as well as product designs that offer luxury and convenience while maintaining food safety and environmental protection.

- To guarantee the quality of the raw materials used in the manufacture of fish sauce, fleets of ships specializing in the exploitation of fish for fish sauce and onboard salting are required.

- Modernizing factories, warehouses, and other facilities is essential to the manufacturing and processing of fish sauce. Implement food safety and quality control initiatives when producing fish sauce.

- Stricter inspection and oversight are required, and a system to firmly address the misuse of chemicals and additives in the extraction, processing, and bottling of fish sauce, as well as the overuse of content, must be established. The list of permitted flavors, color additives, and preservatives published by the Ministry of Health is incomplete.

- Strengthening the Restoration of Ancient Fish Sauce Processing Villages. The development of fish sauce processing village models with enduring traditional characteristics, as well as the creation of geographic indicators and branding for local specialty fish sauces and OCOP products, are imperative.

- The histamine content goal for traditional fish sauce has to be loosened by scientific study and negotiations with Codex.

6. Conclusion

Fish sauce is an essential primary spice in the majority of Vietnamese cuisines. The essence of Vietnamese cuisine is fish sauce, at its best. Made from sea fish and salt that are incubated for several months to "smear" the clean golden water and produce a rich natural flavor, Vietnamese

fish sauce is a type of "oral heritage." Fish sauce has been a necessary ingredient in everyday meal preparation since the tenth century. A culture's identity and spirit are both embodied in its fish sauce. The symbol of a shared bowl of fish sauce among Vietnamese families or the Vietnamese society at large is meant to convey unity. Vietnamese fish sauce must be connected to Vietnamese food in order for it to grow in popularity worldwide. Young ambassadors are foreigners who adore Vietnamese cuisine and are residents of Vietnam from all around the nation. Together, they will work to make Vietnamese fish sauce and Vietnamese food a savory and aromatic "companion" at every meal.

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