# BU MUZANAH STORE[1]

One Saturday morning, the customers were lining up in front of the Bu Muzanah Store to buy smoked milkfish. One of them remarked, "I drove 15 kilometers from my home in Surabaya City just for this. I am expecting my friends from Jakarta for a weekend fellowship, and this is one important dish they requested me to prepare. Since I had a long busy week in the office, I had no time to cook." A fellow next to her quipped, "But why do you have to drive this far? Aren't there any preserved fish store closer to your home?" The lady replied, "There are but the smoked fish products from Bu Muzanah Store has been a long-time favorite in our family. I remembered my Dad took me here in the early 1970s and the quality never faltered. We also bring these products as gifts to our friends in Bali, Singapore, and Malaysia; and they enjoyed them a lot."

These remarks were music to the ears of the salespersons serving the customers at the store counter. "Business has been very good," the supervisor said. "We have had and will continue to have a loyal group of buyers who frequented our store, and they came from distant places. Our commitment revolves around consistent quality assurance, freshness, and prompt service delivery. We are handling a perishable food product and food safety is a top concern. Our boss, Bapak Rosid is always on the search for better and improved fish processing technologies. Extending the shelf-life has been a challenge despite advances in refrigeration."

## Origin of the Family Business

Bapak Ahmad Zakki, currently the Chief Executive Officer, was the fourth-generation member of Ibu Mulyana's family (Exhibit 1). He is known in the community, and casually called by his friends by the name, Rosid. While in college, Bapak Ahmad Zakki had a strong feeling that he would be handpicked by his mother to be the next person from the younger generation who will manage the family business. With his penchant for self-employment and independence, he established his own motorcycle service center at a young age. He was also passionate on identifying creative ways of differentiating the service offering of his motorcycle service business as well as the processed fish products sold by his mother. He believed that service and product quality are best expressed to customers through appropriate packaging.

The family business was founded by his great-grandmother, Ibu Mulyana. It started out as a home-based entrepreneurial endeavor that produced *gado-gado*[2] – a traditional dish consumed by East Javanese families. Using an excellent blend of aromatic spices and natural flavors, Ibu Mulyana's *gado-gado* appealed to the discerning tastes of households in her community. Favorable reviews spread like fire by way of word-of-mouth, and Ibu Mulyana began supplying processed fish orders from neighboring towns and cities. The spicy stuffed milkfish from her

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[1] Maria Rochelle Divinagracia wrote the case as a class discussion material with the assistance of Lasman Parulian Purba and Ellen Pantouw. The author does not intend to illustrate either effective or ineffective handling of managerial decision or business processes. The author may have disguised identifying information to protect confidentiality.

[2] *gado-gado* is a one-dish meal of cooked mixed vegetables that is combined with a hefty serving of fresh home-made peanut sauce.

kitchen has a distinct taste and has never changed in the size of its fish. Her success marked the beginning of a growing family business.

Ibu Mulyanah subsequently handed down the business to her daughter, Ibu Muzanah in 1969. In 1990, Bapak Ahmad Zakki's mother, Ibu Maksunah, took charge of the business. Eventually in the year 2000, Bapak Ahmad Zakki was given the chance to manage the operations. He has been familiar with the processed fish recipe from his mother and grandmother. He started his participation in the family business endeavor as the person-in-charge of packaging the processed fish products. He read about the latest trends in food safety and packaging, and tried them. As an alternative to directly selling the product from the factory, he pursued the idea of opening a store along the main city road in January 2010. He named the store and its products after his grandmother, Bu Muzanah. This store is located in Jalan Sindujoyo in the city of Gresik, which is highly visible and accessible to both loyal and prospective customers coming from various towns and cities. With emerald green as his favorite color, Bapak Ahmad Zakki adopted a lighter shade of green to paint the store, and to print the business logo on the products' package. Green was also associated in effectively creating an image of food freshness in his customers' minds. A deeply religious person, he dedicated the business and its management to God. He claimed that he operated the business with truthfulness, transparency, and honesty to his employees and to his customers. He assured his customers that they were consistently buying a top quality processed fish product from the store, and would not compromise product quality and safety in exchange for a mere faster product turnover.

**Products**

Bu Muzanah Store produced and sold four (4) major products, namely: *Otak-Otak Bandeng* or spicy stuffed milkfish, *Bandeng Asap* or smoked milkfish, *Bandeng Bakar Tanpa Turi* or grilled boneless milkfish; and *Bandeng Presto* or pressed softbone milkfish. Milkfish was the common and major raw material (Exhibit 2) of these processed fish products. Products kept under room temperature are good for two days. These products can also be refrigerated up to 7 days.

Daily production ranged from 300-500 pieces of *Otak-Otak Bandeng*, 100-200 pieces of *Bandeng Asap*, 50 pieces of *Bandeng Bakar Tanpa Turi*, and 40-50 pieces of *Bandeng Presto*. Each product can be distinguished by the design, color, and name on the packaging. Nearly almost all products were sold on the day that these are produced. There was no finished goods inventory that was maintained as the business guaranteed and guarded its reputation for product freshness and quality.

Product prices were acceptable to the target market. Bandeng Presto was sold at the store for [3]Rp 20,000; Rp 32,500 for *Bandeng Bakar Tanpa Turi*; Rp 35,000 for *Bandeng Asap*; and Rp 40,000 for *Otak-Otak Bandeng.* It is not surprising that Bapak Ahmad Zakki can earn Rp 30-40 million per day in the sales of *Otak-Otak Bandeng* alone. Competitors from neighboring stores

[3] One (1) US dollar is approximately equal to Rp 9,500.

priced their products close to Bu Muzanah's store and were copying its packaging designs. Bapak Ahmad Zakki felt that his competitors were emphasizing more on finished goods appearance and packaging rather than on quality assurance. The short shelf-life of the finished product was a critical driver in maintaining quality and freshness, and was a constraint in exporting the product to Bali, Jakarta, and other big cities in the Indonesian archipelago.

Assorted crackers and chips (*Aneka Krupuk* and *Aneka Kripik*), *Pudak*, *Jenang Jubung*, *Ayas* (Traditional Indonesian candies), and original snack foods from the city of Gresik (*Camilan Asli Gresik Lainya*) were also sold in the store to complement the processed fish products. The price per pack ranged from Rp 8,000 to Rp 20,000.

**Buyers of the Processed Fish Products**

Sixty percent of the buyers of the processed fish products were from the neighboring city of Surabaya – considered as the second biggest city in Indonesia. Forty percent of his customers came from within the city of Gresik, and nearby villages and towns. The distance from Surabaya city to Bu Muzanah's store in Gresik is about 16 kilometers (Exhibit 3). These buyers usually travelled to his store to purchase the products for personal household consumption; as gifts to friends and relatives; or as giveaways in corporate gatherings. The owners kept the products' recipes as a family secret in order to protect the founders' legacy, upheld the products' originality, and ensured the products' distinct taste and freshness.

The word-of-mouth messages coming from loyal and satisfied customers, spoke about the products' distinct original taste and consistent quality. This favorable image had reached interested buyers in Jakarta and Bali, and travelers and tourists from Malaysia and Singapore. However, he was reluctant to ship orders from his store to these distant places until he had found a technological solution to the finished products' short shelf-life. He admitted the high likelihood of product spoilage during transit, and was unwilling to risk food safety concerns as well as the family business reputation.

Bulk orders, on the other hand, had begun to be delivered to corporate buyers in Surabaya city and in Gresik. With the significant rise in product acceptance from buyers in Surabaya, Bapak Ahmad Zakki planned to open a branch of Bu Muzanah Store in Surabaya city in 2013.

**Factors of Production**

***Human Resources***

The business operated daily, and had 28 regular employees (Exhibit 4). Twenty-six employees are working in the production area and two employees are in-charge of the store. By instituting a culture of honesty toward his employees, they demonstrated loyalty and fostered a healthy relationship with him. Bapak Ahmad Zakki would address the concerns of his employees well, and was sensitive to their views and suggestions. He patiently listened to their difficulties at

work, and tried hard to provide possible solutions. Majority of the employees have worked in the family business for the past 15-20 years. They are between 25 to 40 years old. They lived near the production area, usually within a five-kilometer radius. They were paid daily per production activity. Activity pay was between Rp 5,000 to Rp 15,000. For example, washing and cleaning ten pieces of milkfish was equivalent to Rp 5,000. One worker was capable of washing and cleaning 300 pieces of fish a day. Therefore, a worker's daily pay can reach Rp 150,000 depending on his productivity.

### *Raw Materials*

The list of raw materials needed to process the fish was documented and presented in Exhibit 5. It showed the frequency and amount of purchase.

Milkfish was the major raw material of the business. Containers of fresh milkfish arrived daily in the production area at 6 o'clock in the morning. This shipment of fish originated within the neighboring fishing community of Gresik. His supplier delivered a minimum amount of 500 fresh milkfish per day. Any downward deviation from this amount will require placement of an order from another supplier. The alternative suppliers are located in the fishing communities of Surabaya city. Each fish must have a guaranteed weight of 4 ounces (or ¼ pounds), are not soft, and should not have red eyes. These characteristics assured the freshness of the fish for processing.

Red onions, garlic, young onion leaves, chili, *kemiri*[4], and fresh coconut were bought every night before the production starts. The owner had a reliable supplier of these ingredients from the public market in Surabaya city. The daily procurement of these materials assured the freshness of these stuffing ingredients.

Other raw materials such as salt, charcoal, coconut shell, bamboo sticks, banana leaves, and boxes for packaging were delivered to the store on a per-order basis.

### *Food Processing Equipment*

Four major types of food processing equipment are used in producing Bapak Ahmad Zakki's processed fish products. These equipments were the separator machine, the mixer, the smoking equipment, and the freezer. The separator machine effectively separated the milkfish flesh and bones. The mixer blended proportionately the cooked stuffing ingredients and the milkfish flesh prior to stuffing them inside the milkfish skin. The smoking equipment was used for smoking the milkfish. The freezer was used for the storage of fresh boneless fish. The fish must be cooled as low as possible to control bacterial growth and spoilage. These equipments were regularly checked as part of preventive maintenance.

[4] *Kemiri* is a tiny nut that is crushed and mixed with chili to enhance its spicy flavor.

The store had glass cabinets to protect the finished products from insects and dust. These cabinets also enabled the salesperson and customers to quickly see the freshness of the processed fish products. Product turnover was quite fast especially, *Otak-Otak Bandeng* and *Bandeng Asap*. Products stayed on display in the glass cabinets for at most 30 minutes prior to sale.

**Production Process**

The production process would start with the procurement of raw materials. The owner and one of his workers purchased red onions, garlic, young onion leaves, chili, *kemiri*, and fresh coconut every evening from the public market. These ingredients must be available, and prepared before the arrival of the fish. As soon as the containers of fresh milkfish arrived, the owner himself manually checked the quality of the fish to ensure freshness of the products. Only those that passed the owner's quality requirements of fresh fish would be used for smoking and grilling.

The production process for each product were documented and shown in Exhibit 6.

The four major products would undergo a similar initial process of product preparation. This step covered the washing and cleaning of fresh fish. It was important to keep the preparation area clean, well-lighted, and under strict sanitary conditions. The work area, cutting boards, knives, and hands were kept clean to prevent bacterial contamination. Each worker was required to wear a hair net, clean clothes, and appropriate foot gear. All fresh fish were cleansed to remove the slime, blood, and harmful microorganisms. The ideal temperature for holding the fish during this stage of the process was below 38$^{o}$F. Simultaneously, all stuffing ingredients were chopped in another line.

***Spicy Stuffed Milkfish***

The milkfish skin is separated from the flesh with bones using a knife. The milkfish skin is then, inverted to ensure no flesh is left. It is then placed in a clean container. Meanwhile, the separator machine separated the milkfish flesh and bones. A secret proportion of stuffing ingredients such as red onions, garlic, young onion leaves, chili, *kemiri*, and coconut milk were mixed and cooked. The cooked stuffing ingredients are blended well with the fish flesh using a mixer. The cooked ingredients were stuffed inside the fish skin, tied and wrapped in banana leaves. Grilling was done twice for about an hour. The initial grilling was done until the banana leaves are burned. The burned banana leaves are removed in preparation for the second grilling. Then, the product was cooled down using a desk fan for about an hour. Severe burning of the fish skin was not acceptable. Products with burned fish skin were rejected, and would not proceed to cooling. Once cooled down, the product was brought to the store in trays.

***Smoked Milkfish***

The fish were then laterally split from the head to the tail, leaving the skin on the fillet. The split fish was de-boned manually. Then, salting and soaking in a secret mixture of spices were done. High levels of salt inhibited bacterial growth and made the product safe. Once the fish has been

soaked in the mixture, it was dried prior to smoking. This allowed the salt to penetrate and to become evenly distributed throughout the flesh of the fish. It also enhanced an acceptable appearance of the finished product. The fish would be refrigerated while awaiting the process of salt penetration to set in, and eventually surface drying. The fish was then smoked for 4-5 hours. Smoking temperature was maintained at 50-60$^{o}$ C. The smoked fish was cooled down prior to delivery to the store. Smoking was done at night until dawn to avoid the neighbors' complaints caused by the smoke.

***Grilled Boneless Milkfish***

After the fish was soaked in a secret mixture of spices, it was steamed for about 45 minutes. It was then cooled, grilled, and cooled again prior to delivery to the store.

***Pressed Softbone Milkfish***

This product followed a similar process like the grilled boneless milkfish from cleaning until soaking. After the fish was soaked in a secret mixture of spices, it was slightly pressed to soften the bones. Then, it was fried with scrambled eggs, and cooled prior delivery to the store.

**Family Business Success and Entrepreneurial Recognition**

The success of Bu Muzanah Store, as a family business, has attracted others to copy and emulate it. For example, competitors would monitor the store's product packaging improvements, and eventually adopt a similar packaging design.

Bapak Ahmad Zakki welcomed new entrants. For him, healthy competition was a necessary element to stimulate small business growth. He openly shared his family's virtues of honesty, and stories of hard work and dedication in various business and trade opportunity events where he and his competitors were invited. These events provided small enterprises to showcase and introduce their processed food products to a wider market. They were also a source of new ideas and feedback from prospective buyers.

With an excellent performance on customer satisfaction and a growing reputation, Bapak Ahmad Zakki was selected to become a beneficiary partner of PT Petrokimia (Persero), an Indonesian petrochemical company involved in CSR activities. PT Petrokimia initiated the provision of societal support that was aimed at empowering and developing the socio-economic conditions of communities through small businesses. One of the benefits that the Bu Muzanah Store received from this partnership was a loan for the purchase of a freezer; and a three-wheeled vehicle for delivery of the finished products. After paying off the loan, Bapak Ahmad Zakki sold the three-wheeled vehicle in exchange for a bigger delivery pick-up. He used this to transport a bigger volume of raw materials on a daily basis, and to deliver a growing number of orders of processed fish products.

He was recently granted a government fund that was used for the subsequent purchase of a bigger three-wheeled vehicle. The fund that the owner received from the government was timely because Bapak Ahmad Zakki needed another vehicle to facilitate on-time deliveries of the finished goods, and to deter threats of product spoilage.

In 2011, PT Semen Gresik (Persero) Tbk conferred awards to small- and medium-scale enterprises that have contributed to the local and national economy of Indonesia. This award called "The Semen Gresik SMEs Award,"[5] recognized the beneficiary-partner SMEs of state-owned enterprises that have achieved business success. Bapak Ahmad Zakki's entry, "*Makanan Khas Gresik"*[6] garnered the 2nd place in the category "The Growth of Domestic Trade and Exports." As a winner, he received a cash prize of ten million rupiah, a trophy, and a certificate.

By way of enhancing the competitiveness of his business and growing his network, Bapak Ahmad Zakki continued to receive invitations to participate in food and trade exhibitions. He was continuously in search of improvements in fish processing technology that can support his growing production needs, and expanding the distribution of his products in Jakarta, Bali, and subsequently, cities in other neighboring Southeast Asian countries. These exhibitions also enabled him to gain access to useful industry research information on small- and medium-scale enterprises in the fish processing sector.

## Industry Background

### *Small- and Medium-Scale Enterprises (SMEs) in Indonesia*

Small- and medium-scale food processing industries (FPIs) in Indonesia had been growing steadily for the past few decades. These industries have been one of the prime movers of the Indonesian economy. They were characterized by home businesses and small-scale enterprises that provide food for local communities and domestic markets outside the communities. Exhibit 7 showed the yearly growth of small- and medium-scale enterprises (SMEs) in terms of number of enterprises, labor force, and added value. The number of SMEs in 2010 had reached about 53 million enterprises. SMEs were able to absorb as many as 99 million people in 2010. Furthermore, the added value of SMEs in 2010 was as much as 3.46 billion rupiah. The Ministry of Industry projected a 3.24 percent growth in the number of SMEs, and a 4.34 percent increase in the labor force employed by these SMEs for the periods 2010 to 2014.

The FPIs were generally located in the rural areas. The technologies used were mainly traditional ones. The process, tools, and set of food processing equipment used were very simple compared to bigger food processors. The finished products usually had a short shelf-life, and are sold in simple packaging materials. As stated earlier, customers were residents from local communities, and some were marketed in cities outside these communities as the products gained wider market

[5] Pantouw, Ellen. 2012. *Sukses Usaha Bersama Semen Gresik* (Success with Semen Gresik). Surabaya: Bureau of Partnership Programmes, PT Semen Gresik (Persero) Tbk. 298 pages.
[6] The English translation means, "Traditional Gresik Food" or "Traditional Food of the City of Gresik".

acceptance. The products produced by the FPIs included *tempeh* (fermented soybean cake), *tauco* (fermented soybean paste), *oncom* (fermented soybean or peanut press cake), tofu, salted fish, *ikan peda* (salted-fermented fish), palm sugar, *kerupuk* (fish/shrimp crackers), *rempeyek* (peanut crackers), *petis* (shrimp paste), *terasi* (fermented shrimp or fish paste) and many other traditional cakes or pastries made from various flours. Shrimp crackers, *emping belinjo* (cinnamon crackers), and palm sugar have successfully entered the export market in the European Union.

Indonesia is one of the world's leading fisheries producer and exporter (Exhibit 8). It is the tenth largest supplier of frozen shrimp in the EU market. In 2009, it captured a four percent market share of the EU market. The markets for fish and crustaceans like shrimp are highly price competitive, and some countries have a competitive advantage because of preferential tariff rates under free trade arrangements (FTAs) with the European Union. Indonesia is one of the Southeast Asian countries with preferential duties on fisheries. The competitiveness of Indonesia in the EU fisheries market is determined by conditions[7] involving (i) export prices relative to competing suppliers; (ii) magnitude and type of accessible demand; (iii) accessibility and reliability of supporting industries; and (iv) firm strategy and rivalry (Exhibit 9). Indonesia has a cost advantage in its proximity to large marine and fishery resources, and its abundant labor supply. Fish processing operations of enterprises must comply with good manufacturing practices and standards in order to supply the EU market. The large number of enterprises competing for customers gave rise to considerable rivalry for the small producers. High storage costs and perishability of processed fish products intensified the competition for customers.

The development of the FPIs illustrated that the availability of raw materials, the absorption rates of the products by the local market, and supply chain management (e.g. supplier relationships) had significant roles in the industry's growth.[8]

The FPIs, particularly the smaller ones, were scattered throughout the country. The concentration of Indonesia's population would be in Java. This island has become the main center of small-scale FPIs. In February 2012[9], the labor force continued to be concentrated in Java Island. This labor force consisted of about 69.7 million persons (or 57.9 percent of the total labor force). The rest of the labor force numbering about 50.7 million people (or 42.1 percent) were scattered across the other provinces of Indonesia. The government continued to nurture the development of small FPIs for traditional products with growing demand, products with export market potential, products with higher value-added, and those that used local raw materials that were readily available.

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[7] Lord, Montague, Rina Octaviani, and Edzard Ruehe. 2010. Indonesia's Trade Access to the European Union: Opportunities and Challenges. p. 101-102.
[8] Najib, Mukhamad and Akira Kiminami. 2011. Innovation, cooperation and business performance: Some evidence from Indonesian small food processing cluster. Journal of Agribusiness in Developing and Emerging Economies. 1(1): 75-96.
[9] For details, visit www.kkp.go.id

On the contrary, the larger-sized FPIs located in areas where industrial support facilities and infrastructure were sufficient. A number of these FPIs were based in different geographic areas. Some of these, however, experienced inadequate investment support, unavailability of good quality raw materials, poor marketing, lack of infrastructure and facilities, and access to well-trained workers. As a result, troubled FPIs were associated with the use of inefficient production practices, delivery of low-quality finished products, and adoption of poor hygienic practices.

The contribution of the FPIs in Indonesia can be evaluated from the share of the food processing sector to the total gross domestic product (GDP). The average share of the FPIs in Indonesia in terms of total GDP was less than 10 percent from 2004 to 2009 (Exhibit 10). Even though the FPI's contribution was small, the GDP share of the food processing increased yearly by approximately four percent per year during the past 5 years (Exhibit 11).

### *Fish Processing Activities*

About one-half of all fish destined for human consumption were distributed and sold in live and fresh forms, and the other half underwent some degree of processing. About three-fourths of all processed fish was in the form of frozen, cured, and prepared or preserved products. Freezing was the main method of processing fish for food use – thus, accounting for one-half of total processed fish for human consumption; followed by prepared and preserved fish (about 30 percent); and cured fish (20 percent). Fish supply came from capture fisheries and aquaculture. Indonesia's capture fisheries contributed about 60 percent of the gross value of fishery output, and aquaculture accounted for the remaining share. Marine fish accounted for over 60 percent of the total fishery supply; crustaceans represented 12 percent and mollusks 3 percent.[10] Aquaculture in Indonesia was practiced in fresh, brackish and marine water using a variety of species, production facilities, and methods. The most common cultured species in freshwater aquaculture were carp, tilapia, and gouramy whereas milkfish and shrimps dominated the production in brackish waters. In 2008, the expansion areas for aquaculture development in brackish waters reached about 774 thousand hectares.[11] Ten years ago, aquaculture contributed less than 20 percent of total output. In 2010, its contribution was estimated at over 40 percent (Exhibit 12).

Basic fish processing activities involved simple methods of transformation, such as filleting, salting, canning, drying and fermentation. More advanced value-adding activities involved the preparation of convenience foods and a wider variety of higher value-added products in fresh, frozen, breaded, smoked or canned forms of fish. These value-adding activities required sophisticated production equipment, hygienic and efficient processing methods, and substantial capital investments. The production requirements included, (a) freezing and cold storage; and (b) product processing technologies that generate value-added to meet the growing market demand for fishery products that are ready to cook (i.e. so-called convenience products).[12] Examples of

[10] Lord, *op. cit.*, p. 95.
[11] Indonesian Aquaculture Development, 2008.
[12] *Ibid.*, p. 96-99.

these higher value-added fish products included, among others, Individual Quick Frozen (IQF) products, shrimps, breaded fish, and fish balls.

Smoked fish, which belongs to the prepared and preserved fish category, was a thriving business for small- and medium-scale enterprises in the East Java province of Indonesia. It had its origins during the Dutch Colonial period when the country was ruled by the government of the Netherlands. Fish smoking was a form of preserving the eating quality of fish worldwide. The market viewed fish smoking as a natural way of processing fresh aqua-marine products, and extending their shelf-life without the need for canning and use of chemical preservatives. Given this product's affordability and acceptable local taste, Indonesian households would prefer smoked fish over canned or bottled fish.

***Major Constraints of SMEs in the Food Processing Industry, and Efforts to Solve their Problems***

Generally, small-scale industries in Indonesia have little investible capital, and are managed in a traditional manner. Major constraints of small-scale food processing enterprises are summarized as follows: [13]

- Use of simple and traditional technology
- Need for better technical and managerial skills
- Relatively low quality of product
- Limited access to markets
- Difficulty in marketing expansion
- Credit problems
- Lack of facilities
- Uneconomical maintenance cost

In the fish processing industry, quality deterioration and significant post-harvest losses occurred because of inadequate use of cold storage, long supply chains, poor access to good roads and supply of electricity, and inadequate infrastructure and marketing distribution services. Market infrastructure and facilities were likewise, often limited or congested. As a result, SMEs in the fish processing industry are finding it increasingly difficult to market its perishable finished goods.

It is interesting to note, however, that the utilization and processing of fish had diversified significantly in the last two decades, particularly into higher value-added fresh and processed products. This phenomenon was fuelled by changing consumer tastes and advances in technology, utilization of better packaging, and access to logistics and transport services. Utilization of total fish production in Indonesia was largely consumed in fresh form (43.1%),

[13] Damardjati Djoko Said. 1994. Food Processing in Indonesia: The Development of Small-Scale Industries. Bogor, Indonesia: Agency for Research and Development. 13 pages.

frozen (30.4%), canning (13.7%), and other processed forms (12.8%).[14] Other processed forms included salted fish, smoked fish, boiled fish products, and fermented fish product such as shrimp paste. Household consumption expenditures in 2011[15] gave the largest contribution to total GDP at 54.6 percent, and had been growing at a rate of 4.9 percent.

Improvements in storage and processing capacity, together with major innovations in refrigeration, food-packaging and fish-processing equipment supported diversification. Improved processing technologies enabled fish processors to extract better yields from the raw materials, and more attractive processed product forms using fresh fish as a major raw material. This year, the Ministry of Marine Affairs and Fisheries of Indonesia emphasized that the fisheries industry needed about 2.48 million tons of fish to increase production, productivity, and value-added of marine and fisheries products. The assistance to the fishing communities, fish farmers, fish processors, and sellers of processed fish products were being facilitated by the Ministry of Marine Affairs and Fisheries. These assistance covered business development, technical information, and improvement in facilities and infrastructure for fish product marketing.

The research and development of postharvest systems for handling fish as a raw material were important in developing appropriate measures to: (i) increase its shelf life; (ii) reduce physical, sensory, and nutritional losses; and (iii) preserve the quality and safety of the finished products as these are delivered to their market destinations.[16] The latter is important to safeguard consumer health, achieve food security in the marketplace, and ensure the sustainability of the fish processing industry.

[14] Indonesian Statistics (BPS).
[15] Facts and Figures 2012, Ministry of Industry, Indonesia.
[16] Food and Agricultural Organization (FAO) of the United Nations. "The State of World Fisheries and Aquaculture (SOFIA)". Available: http://www.fao.org/publications/en/.

**Exhibit 1**

**GENEALOGY OF THE FAMILY BUSINESS**

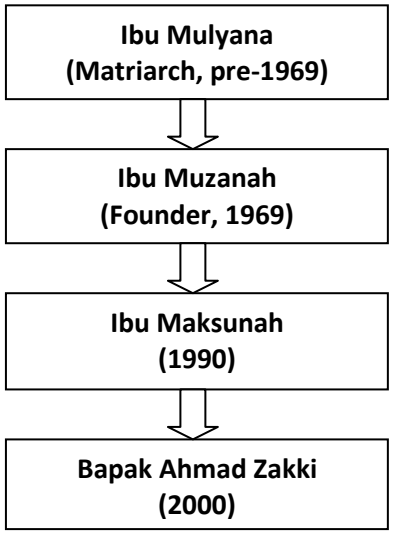


**Exhibit 2**

***BANDENG* (MILKFISH): MAJOR RAW MATERIAL IN THE PRODUCTION PROCESS**

**Exhibit 3**

**DISTANCE BETWEEN SURABAYA AND GRESIK, EAST JAVA, INDONESIA**

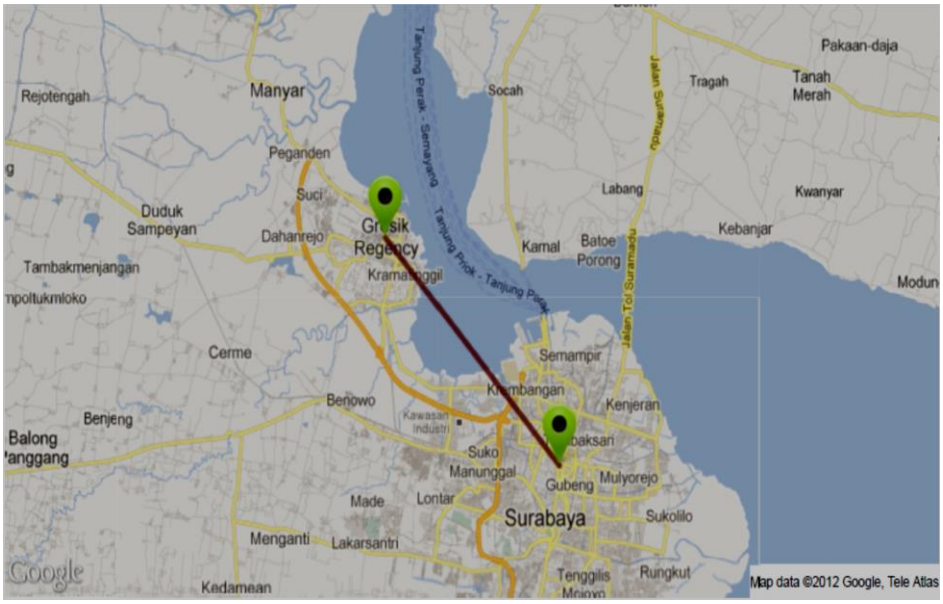


**Exhibit 4**

**PROCESSING TIME IN THE PRODUCTION OF STUFFED SPICY MILKFISH, SMOKED MILKFISH, GRILLED BONELESS MILKFISH, AND PRESSED SOFTBONE MILKFISH**

| Product | Process Activity | Processing Time (Minutes) | Paid Employees (Number) |
|---|---|---|---|
| Stuffed Spicy Milkfish | Washing and Cleaning of Milkfish | 30 | 2 |
| | Separating the Milkfish Skin, Meat, and Bones | 30 | 1 |
| | Cooking Stuffing Ingredients and Stuffing the Milkfish Skin | 30-50 | 1-2 |
| | Grilling the Stuffed Milkfish | 60 | 5 |
| | Cooling | 60 | 1 |
| Smoked Milkfish | Removal of Bones | 480 | 2-4 |
| | Soaking in Mixture | 40 | 1 |
| | Smoking | 240-300 | 1-2 |
| | Cooling | 60 | 1 |
| Grilled Boneless Milkfish | Soaking in Mixture | 40 | 1-2 |
| | Steaming | 45 | |
| | Cooling | 45 | 1 |
| | Grilling | 10 | 1-2 |
| Pressed Softbone Milkfish | Soaking in Mixture | 40 | 1 |
| | Pressing | 60 | 1 |

**Exhibit 5**

**RAW MATERIALS INVENTORY IN THE PRODUCTION OF STUFFED SPICY MILKFISH, SMOKED FISH, GRILLED BONELESS MILKFISH, AND PRESSED SOFTBONE MILKFISH**

| Raw Materials | Frequency of Purchase | Amount Purchased |
|---|---|---|
| Bandeng (Milkfish) | daily | 500-1000 pieces (weighing 4 oz. each) |
| Red Onion | daily | 40 kilos |
| Chili | daily | 50 kilos |
| *Kemiri* | daily | 5 kilos |
| Onion Leaves | daily | 70-100 kilos |
| Garlic | daily | 15-25 kilos |
| Coconut | daily | 50-75 pieces |
| Salt | every 10 days | 2 sacks (50 kilos per sack) |
| Charcoal | monthly | 1 ton |
| Coconut Shell | weekly | 10-15 sacks (50 kilos per sack) |
| Bamboo Sticks | when inventory is low | 100,000 pieces |
| Boxes | when inventory is low | 100,000 pieces per delivery |
| Banana Leaves | when inventory is low | 1 *becak* |

**Exhibit 6**

**PROCESS FLOWCHART IN THE PRODUCTION OF STUFFED SPICY MILKFISH (A), SMOKED FISH (B), GRILLED BONELESS MILKFISH (C), AND PRESSED SOFTBONE MILKFISH (D)**

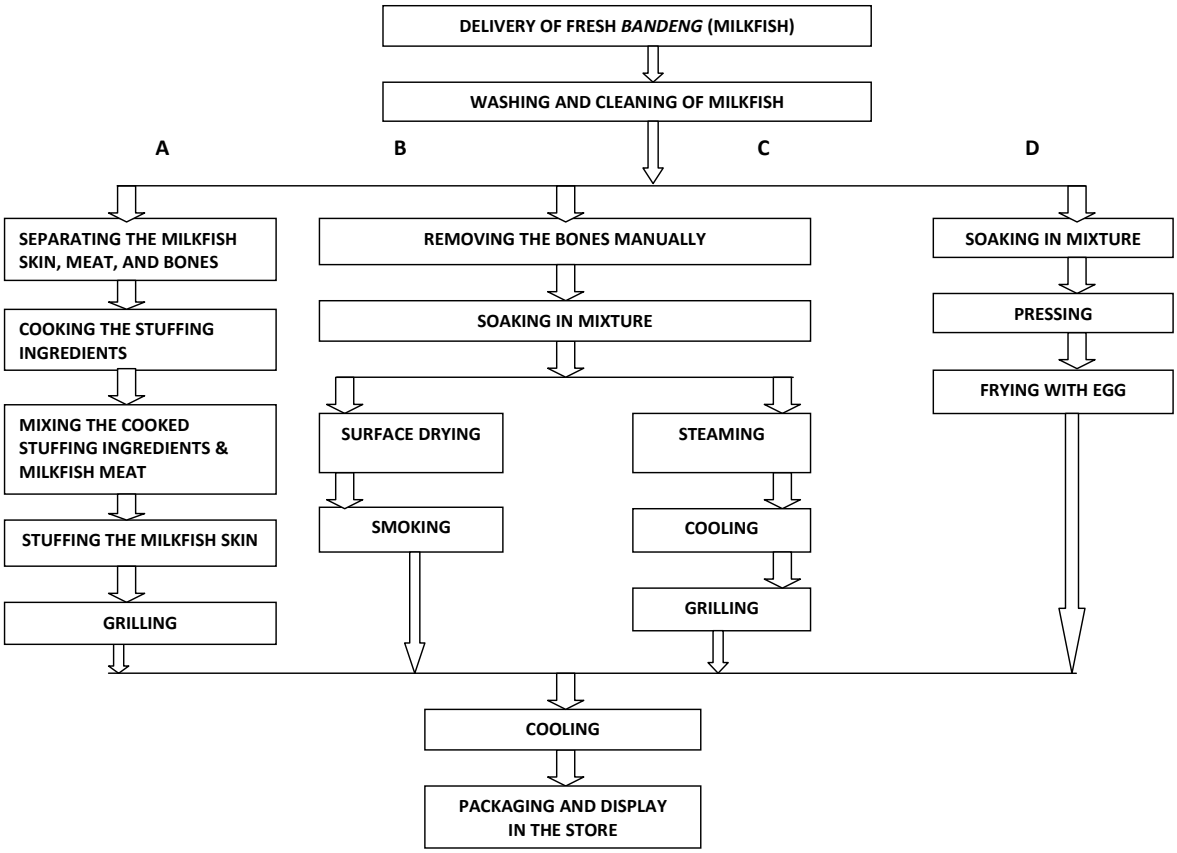


**Exhibit 7**

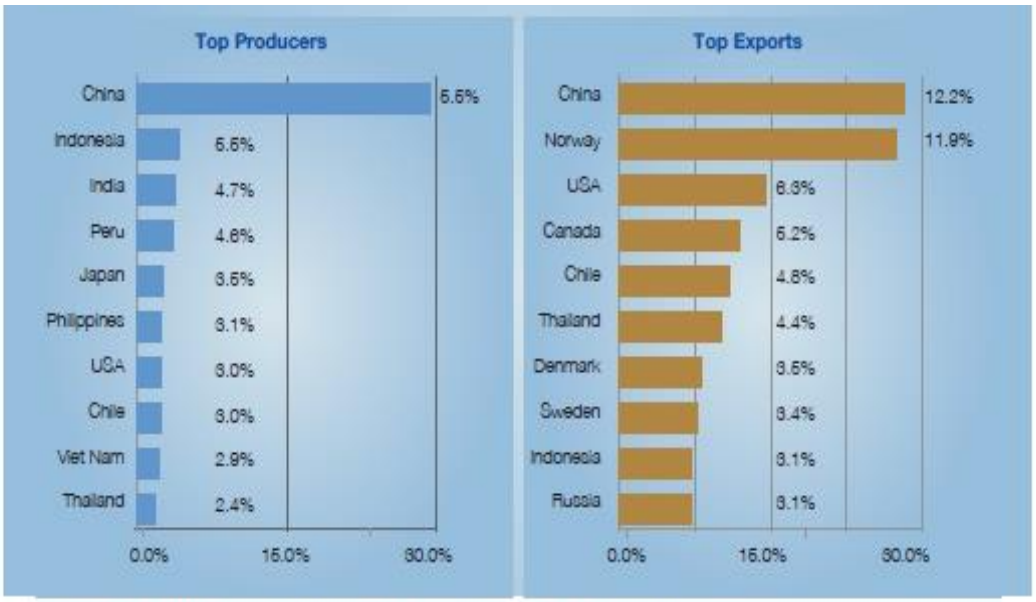
**INDICATORS OF SMALL-AND MEDIUM-SCALE ENTERPRISES IN INDONESIA, 1999-2010**

| Year | Indicator of SMEs* | | |
|---|---|---|---|
| | Enterprises (Number) | Labor Force (Number of people) | Value-Added (Billion IDR) |
| 1999 | 37,911,723 | 67,167,844 | 647,475 |
| 2000 | 38,723,987 | 70,407,439 | 689,493 |
| 2001 | 38,904,968 | 72,664,079 | 806,599 |
| 2002 | 40,764,668 | 75,643,750 | 915,912 |
| 2003 | 42,535,336 | 79,404,196 | 1,017,004 |
| 2004 | 43,707,412 | 75,490,523 | 1,271,990 |
| 2005 | 47,102,774 | 83,233,793 | 1,491,061 |
| 2006 | 48,779,151 | 89,547,726 | 1,786,218 |
| 2007 | 49,840,489 | 91,752,318 | 2,121,309 |
| 2008 | 51,409,612 | 93,491,243 | 2,613,226 |
| 2009 | 52,764,603 | 96,211,332 | 2,993,151 |
| 2010 | 53,823,732 | 99,401,775 | 3,466,393 |

**Note: IDR means Indonesian Rupiah**
*** According to the Ministry of Cooperatives and SMEs, the SME figures included the microenterprises in Indonesia**

**Exhibit 8**

**WORLD'S TOP FISHERIES PRODUCERS AND EXPORTERS, 2009**




Source: FAO Fisheries and Aquaculture Information and Statistics Service

**Exhibit 9**

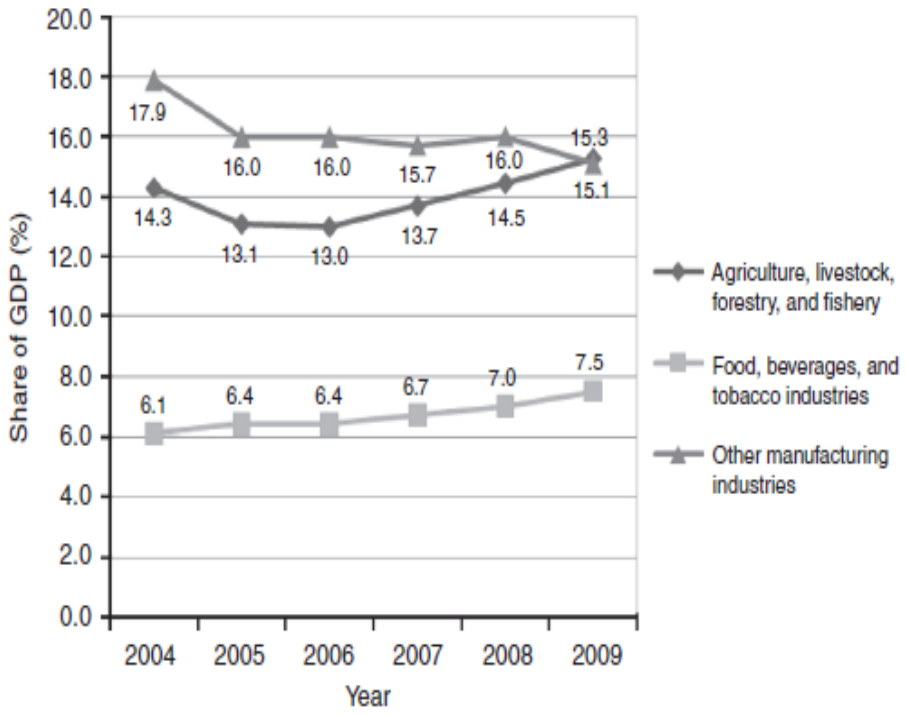
**COMPETITIVE ANALYSIS OF INDONESIAN FISHERIES INDUSTRY**

| | Strengths | Weaknesses |
|---|---|---|
| Pricing Conditions | • Proximity of marine resources.<br>• Abundance of low-cost labor.<br>• Rapid development of fish farming has led to more stable supplies for processors.<br>• Cost-reducing firm strategies enhance price-competitiveness.<br>• Increased pre-export processing. | • Price volatility associated with shifts in supply and demand conditions.<br>• Real effective devaluations by competing suppliers to EU market.<br>• Strong competition from low-cost producers in other countries.<br>• High costs and delays in the transportation and import/export clearance process. |
| Demand Conditions | • Increased demand for fish varieties available in Indonesia.<br>• Increasing use of EU-consistent technical and phytosanitary standards.<br>• Increased product innovation by larger processing companies. | • Limited diversification due to specialized activities of fishing vessels and fish farming.<br>• Small producers lack quality standards.<br>• Inconsistent quality standards.<br>• Shifting consumer preferences and uncertainty surrounding those changes. |
| Industry Networking | • Networking among processing firms.<br>• Close linkages in downstream activities of larger firms.<br>• Strong support from Government | • Lack of clusters of smaller fishing enterprises .<br>• Weak linkages to trucking, logistics, warehousing, software, banking and finance.<br>• Insufficient capital investment and low labor skills relative to other major foreign suppliers. |
| Conditions for Conducting Business | • Strong competitive environment<br>• Incentives to introduce innovation and branding.<br>• Diversification in aquaculture has increased market opportunities. | • Lack of properly defined industry strategy.<br>• Lack of coordination among central and local government agencies, business sector.<br>• Difficulties in meeting international needs in technical & phytosanitary standards.<br>• Lack of timeframe for trade policy adjustments. |

Source: Lord, Montague, Rina Octaviani, and Edzard Ruehe. (November 2010). Indonesia's Trade Access to the European Union: Opportunities and Challenges.

**Exhibit 10**

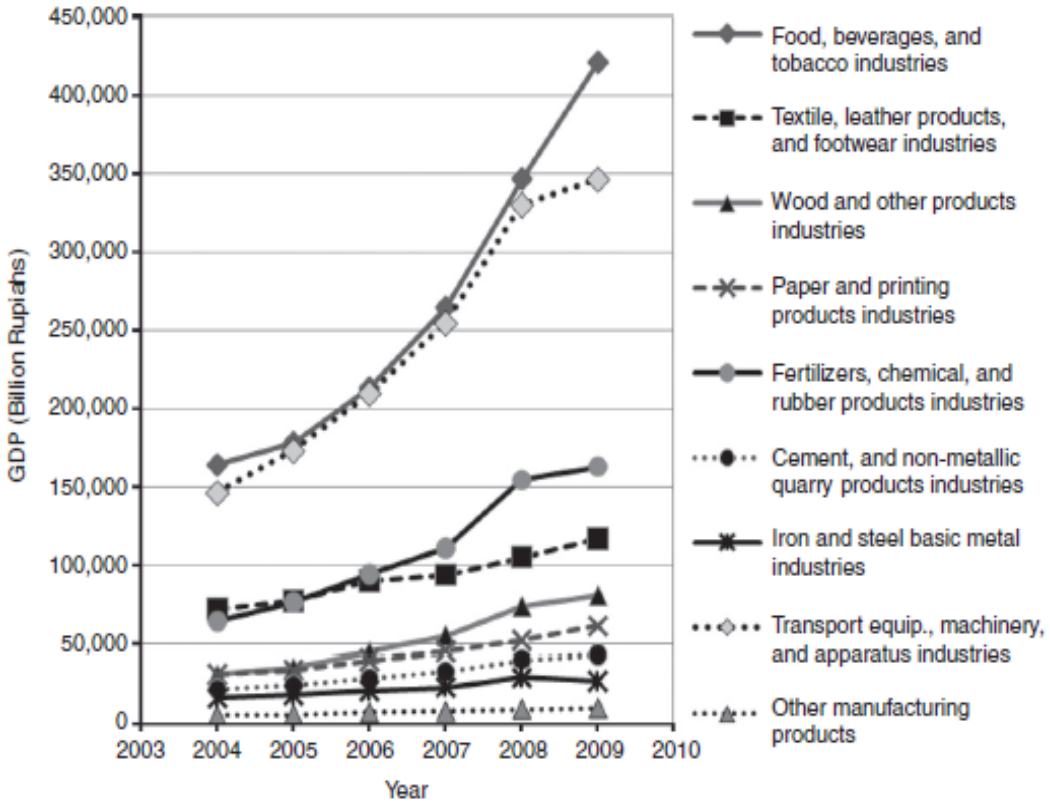
**CONTRIBUTION OF FOOD PROCESSING IN TOTAL GROSS DOMESTIC PRODUCT (GDP)**




**Source: Indonesian Statistics (BPS)**

**Exhibit 11**

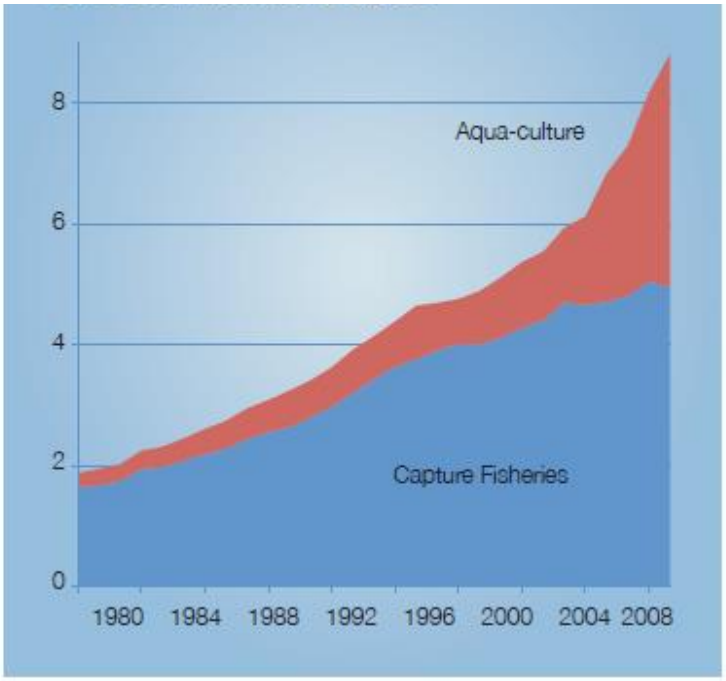
**GROSS DOMESTIC PRODUCT (GDP) OF THE FOOD PROCESSING INDUSTRIES WITHIN THE MANUFACTURING INDUSTRIES**




**Source: Indonesian Statistics (BPS)**

**Exhibit 12**

**GROWTH OF INDONESIA'S AQUACULTURE AND CAPTURED FISHERIES OUTPUT**




Source: FAO Fisheries and Aquaculture Information and Statistics Service