WOMEN’S INVOLVEMENT IN PROCESSING AND THE GLOBALIZATION OF PROCESSING IN FISHERIES AND AQUACULTURE IN TAIWAN

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Abstract

In Taiwan, products from fisheries and aquaculture are often processed in traditional ways. Recently, however, new packaging ideas and protocols have emerged. Women’s efforts and ingenuity have contributed immensely to the novelty products and have provided the cutting edge for the marketing of Taiwanese seafood products in domestic and international markets. In the present study, a questionnaire was designed and used in interviews to explore the competitiveness of major Taiwanese processed aquatic products in the global market. From the results we found both local and foreign consumers are willing to pay more for certified and ready-to-eat processed seafood. There is a lucrative market also for non-food products, such as well-designed carved corals and processed fish larval feeds. Self-designed homepages and websites plus the popularity of using commercial networks among consumers provide the potential for e-marketing now and in the future. Value-added aquatic products have been created using suitable processing and packaging methods. Hazard analysis critical control point (HACCP) accreditation has also made the processed products more competitive. Women have created many pioneering ideas in the processing of aquatic products. Women’s innovativeness is often linked with their innate eye for natural beauty, and their talent in turning out nutritious and delicious food in home cooking. The popular ready-to-eat microwaveable milkfish and tuna products in Taiwan are testimony to women’s ingenuity in the processing and packaging areas. From the results we obtained, we recommend that:

1. the government offer further training courses for women and men in e-commerce, food processing and packaging, business management and other business-related activities;
2. the relevant associations establish a databank for production and consumption;
3. women be encouraged to join and enhance the global market; noting that women-owned companies have increased their share of the aquatic products business turnover in the last 20 years; and
4. for further development, more research be devoted to evaluate the future roles that the government, industry and research sectors can play to ensure sustainability of processing and globalization in fisheries and aquaculture products.

Introduction

The Food and Agriculture Organization (FAO) has reported that the demand for seafood has been rising faster than the supply, as reflected in the decline in per capita consumption of seafood from 14.6 kg in 1987 to 13.1 kg in 2000 (FAO 2002). The global population is increasing while the supply of aquatic protein from capture fisheries is static or declining. There is a growing global need for aquaculture. For millions of people in developing countries, the increasing demand for protein that can only come from aquaculture is a crucial priority. In addition to this basic protein demand, aquatic products can provide new convenient and delicious foods and wonderful jewelry. Women's efforts and creative ideas have often been the key to new uses of aquatic products.

In many developing countries, new aquaculture ventures offer one of the few avenues to new enterprises that can generate employment and income to overcome poverty, particularly in rural areas (FAO 1995). The responsible women's communities worldwide have shown themselves very willing to work with the men to address such opportunities. The key to success in many industries is going back to the basics of full utilization of wisdom and effort from both genders. It is through maintaining a dialogue on opportunities, regardless of gender, that we create the chance of taking these industries to a fair and sustainable development.

Processing is an ideal means of prolonging, or at least maintaining, the shelf life of aquatic products. Processing technologies need to improve. Suitable technologies and practices are needed for managing the whole production line and for marketing the products. Women play increasing and sometimes pivotal roles in the development of aquatic product processing, and in so doing increase their incomes, help promote trade, and increase the globalization of fisheries and aquaculture (Kao 1997). However, to understand women's contributions, we need to bring updated information from different continents to understand the whole picture better. In gathering this information, the more we have the involvement of professional societies such as the World Aquaculture Society, Asian Fisheries Society, American Fisheries Society, European Aquaculture Society, the more women will be able to play productive and functional roles. This study therefore contributes to the knowledge of the role of women in the Taiwanese fisheries industry.

According to the statistics provided by the Tax Information Center in the Ministry of Finance, 33.87% of the Taiwanese enterprises were owned by women in 2003. In terms of total business turnover, women contributed 13.07%: 8.62% of export value and 14.58% of domestic sale value. In the last 20 years, the percentage of women employers leaped from 10.15% to 15.14% and the percentage of businesses owned by women also increased from 15.79% to 22.00% (Anon. 2004). According to statistics that have been compiled by the National Youth Commission (http://www.nyc.gov.tw/default.htm), businesses owned by women have grown in the past 10 years, from 12.7% to 16.6% of the total number of businesses. In addition, 15.8% of small and medium-scale enterprises and 11.9% of big enterprises hired women executives in 2002.
In the present study, a questionnaire was designed to explore Taiwan’s unique and important processed aquatic products, considering the key issues related to globalization. We sought out companies with long-term or diligent involvement of women to thoroughly and fairly investigate their achievements and efforts to solve problems during the phases of establishment, growth and expansion. We note that to ensure aquatic food safety and enhance production value, international processed food quality standards are moving toward the adoption of HACCP as a mandatory requirement for the processed food industry. Thus, this trend was also investigated in our study. In Taiwan, e-commerce has become feasible and popular (Yang 2001). Both local and foreign consumers are willing to pay more for certified and healthy seafood, and other nonhuman food products such as well-designed carved coral jewelry and larval fish food organisms. The self-designed homepages and websites plus the popularity of using commercial networks among producers, transporters and consumers provide the potential for e-marketing systems now and in the future.

In Taiwan, women no longer remain invisible and their roles as competitive professionals in fisheries development are already acknowledged (Chao et al. 2001). In this study, interviewees show their individual concepts and understanding of processing, trade and globalization for aquaculture and fisheries products. Crafted coral, designer pearl jewelry, unique tuna mooncakes, salted roes of grey mullet, *Mugil cephalus*, processed Sakura shrimps (*Sergia lucens*), frozen cultured copepods, milkfish sausages and popsicles are some of the unique products from the aquaculture and fisheries sectors in Taiwan. In this study, these are the target products specially chosen for discussion because women have played a significant role in their development and marketing. We present the results of our interviews as a series of case studies.

**Case Studies**

**A. The True Story of the LuCoral & LuPearl Company and the LuCoral & LuPearl Corporation**

The corporation was established in 1963 in the Pescadores, a series of islets famous for rich natural coral resources. It has been operated under the collaboration of eight daughters and three sons in the Lu family and supervised by their mother for years. Today, LuCoral & LuPearl is an international enterprise run by the founders’ children and several of her grandchildren. Two of the founders’ younger daughters, Victoria H.Y. Lu and Felicia Lu Chen, work as liaison officers in the Taipei headquarters, while two elder sisters are handling the international marketing branches in the United States of America (USA). The corporation has more than 1,000 staff in more than 20 branches worldwide. Holdings include research and development centers in Taiwan, China and USA, freshwater and saltwater pearl farms in China, and two pioneering Coral Museums (Taipei and Honolulu, Hawaii). The LuCoral Museum, the first of its kind, is one of the holdings of the LuCoral & LuPearl Corporation. The global business is spread over North America, South America/Caribbean, Western Europe, Asia, Australia and New Zealand.

The corporation originally produced precious coral jewelry for the domestic market. Over the past 41 years, the Lu family has trained a majority of Taiwan’s master coral craftsmen. Many of them have contributed works to the LuCoral Museum. During the interview, we learned that the museum offers the chance to view coral sculptures, including the largest precious coral sculpture in the world. There is a framed and unique pearl-cross which is a replica of the one presented to Pope John Paul II by LuCoral & LuPearl. There are also carvings of scenes from Christianity, including angels and Christ’s crucifixion. Many other works feature traditional Chinese motifs.

In addition, the company also conducts seminars and classes. Classes include do-it-yourself jewlerymaking and gemstone identification. The classroom is one of the locations that offer courses leading to international and official certification of the Fellowship of the Gemological
Association from the Gemological Association and Gem Testing Laboratory of Great Britain. In the last 40 years, the company has developed a variety of business models, including Original Equipment Manufacture, Original Design Manufacture, Original Brand Manufacture, Original Marketing Manufacture (OMM), export/agent, value-added resell, wholesale, retail and others.

The LuCoral & LuPearl Corporation (www.lucoral.com) is the pioneer of precious coral art exhibitions through the contribution of women members in three generations of the Lu family. It is also a personal interest of the Lu family who wish to help others to appreciate the beauty and rich history of precious corals and to have concern for fisheries resources and products from the sea.

In the near future, they have a vision to establish the Lu-Coral Theme Park to emphasize the following five issues: (1) the culture of a creative industry that stimulates the combination of domestic culture with the coral and pearl industry; (2) resort fisheries to promote island-wide souvenirs as favorite items for tourists; (3) e-commerce to utilize digital and web techniques as modern tools of services and business; (4) linkages with biotechnology to produce unique products such as facial membranes with pearl ingredients for OMM; and (5) making of fashion items for adults.

B. Yuan-Bo Company: Export-oriented Company of Frozen Food Organisms and Live Fish Larvae

Mrs Cheng, wife of a well-known Taiwanese fish hatchery owner, involved in exporting live larvae of marine fishes, such as grouper, seabass, seabream, red drum and cobia, has herself become involved in a series of hatchery tasks such as propagation, induced maturation, larval food production and feeding, and live transportation of larvae. During the last three decades, she worked as a manager in the hatchery and quickly learned all details of the necessary technical know-how. The company's most important processed item is frozen copepoda as convenient food organisms for fish larvae. The protocol to reproduce the frozen copepoda includes their cultivation in ponds, harvesting and grading, freezing at -30°C, examination of their sanitary condition and packaging for exportation. Mrs Cheng has always played a very important role in the family business and has strongly encouraged her two sons to study aquaculture in domestic and Japanese universities. Now, the family owns the export-oriented Yuanbo Aquaculture Corporation and has established a Japanese website for international e-business in selling live fish larvae, specific pathogen-free larvae, fertilized eggs, compound feeds and frozen food organisms. The corporation (www.yuanbo.com) owns a branch in Japan, five hatcheries and export stations in China and is ranked as a successful international entrepreneur of hatchery products.

C. OTORO: Creative Net of Tuna Promotion

Two housewives, Mrs Hsin-Chun Hsu and Mrs Ju-Yi Cheng, met three years ago in a Parent-Teacher Association meeting and came up with the same idea to work at home using fisheries products, especially high-value tuna from the Tungkang fishing village. They went to join the Flying Geese Program and Small Office Home Office Association (SOHO) established by the Executive Yuan, Taiwan. SOHO provides consultant and evaluation services to help entrepreneurs achieve success in cyberspace. The annual fees they paid covered website operations and maintenance, training classes on e-commerce, and consultant and marketing services.

Soon they started to work via a personal website selling raw tuna belly fillets, the famous and expensive otoro, in both Japanese and Taiwanese markets, during the peak seasons for otoro. Not long after that, they created another idea to prepare frozen homemade otoro dumplings during the lean season. It was a successful innovation and initiative in terms of fully utilizing a high-priced fisheries product. The product proved convenient for consumers who could
enjoy the processed fisheries product year-round. Furthermore, they also created a novel kind of mooncake, again a product of processed residual otoro, during moon festival, one of the three big events in the Taiwanese calendar. Before they could manufacture it, however, the bakery owner required them to sign a contract for at least 30,000 cakes to meet the costs of HACCP and to meet the sales demand of the festival weeks. Without previous experience but full of confidence, they complied and found that the novel mooncakes with otoro as the major ingredient were looked upon as a healthy food, neither as oily nor as sweet as the traditional mooncakes. Finally a total of 50,000 mooncakes were sold. Recently, they have hired women workers during the production season of mooncakes and have kept on expanding their processing business for tuna and other local products. The keys to their success are respect for professionals including computer experts and university professors, getting timely assistance from ongoing government programs and promoting their stories to the media. Visit www.otoro.com.tw

D. Tungkang Song Co.: Exporter of Processed Sakura Shrimp

Sakura shrimp is one of the shrimp resources belonging to the family Sergestidae in Taiwan. The shrimps are captured only from Kaoping Channel off the mouth of the Kaoping River, southwestern Taiwan and Suruga Bay, Tokyo, Japan, and are thus looked upon as a unique product (Chen and Su 1993; Omori and Shida1995; Lee et al.1996). The depth distribution of sergestids ranges between 100 and 300 m, covering an area of about 320 km². In the 1990s, the Tungkang Fishermen’s Association learned about the existence of such precious fisheries resources from Dr. S. Omori, Tokyo University of Fisheries. The association then organized a product-promotion union to ask their members to obey the fishing regulations for the shrimp, including controls on the number of fishing vessels (slightly more than 40 boats), the amount of catch per vessel, fishing periods throughout the year, and maximum and minimum unit prices of Sakura shrimp. High-fishing intensity is a cause of great concern for this resource. All fishing boats harvesting the fisheries stock are baby trawlers that use similar gear (mid-level trawl nets) and techniques, with uniform fishing operations.

Tungkang Song Co. (www.hipages.com.tw), owned by Mr. Song and his sister, is one of the companies that has been involved in this fishery for more than 20 years. Because of having a single target species and a short and intensive fishing period, the fishery demands a great deal of labor during harvesting, cleaning, sorting, sun-drying, air-drying, packaging, marketing, promotion and cold-storage. In the Song’s 10-ha factory, most of this labor is supplied by women. The monthly business volume reaches US$57,000 to 85,000 during the peak season. It is expected that with improved technology and automation, both men and women will soon work together in a less labor-intensive fashion and with higher revenues possible for the owners. To work toward globalization, they have organized a study group with friends in the same field to visit the Japanese company that has developed automatic processing. They have also annually invited Japanese experts to evaluate and comment on their processing factories.

E. Chuan Kuan Enterp. Co. - Aquaculture Department Stores

Over the last 30 years, Aquaculture Department Stores (www.omega3.com.tw) has become a well-known company that supplies over 1,000 items of aquaculture-related goods in Taiwan and to many Asian countries. As in case B above, the lady owner, Mrs Chin-Men Chien, started to work hand-in-hand with her husband right at the beginning of the business. She became a capable leader and manager of an international business, and the boss of several senior and junior lady assistants. Her company distributes new brochures on aquaculture-related goods yearly to existing and potential clients. The brochures provide details on products including feeds, chemicals, nets, blowers, engines, aerators, pipes, tanks, laboratory wares, test kits and aquaculture books, among others. Among these products, supplemental feeds for fish, prawn and shellfish, and dry cysts of Artemia are the major processed products. The company has successfully established a vertically integrated international chain of businesses including...
upstream domestic and international suppliers, hatchery owners, professors and students in
the aquaculture field in universities. It is a growing aquaculture department store with a well-
established business and a good future as a sustainable global enterprise.

**F. Hanaqua Tech. Inc.: Feed and Tilapia Exporter**

Hanaqua Tech. Inc. (www.hanaqua.com) is well-known as an importer of fishmeal and an
exporter of manufactured feeds for fish and prawns. Hanaqua’s services broadly cover the
aquaculture industry fields of hatchery, grow-out, feed factory and processing plant. The
company has 10 staff (50% women, including an assistant manager) in the liaison office and
around 70 employees (over 90% women, including a leader) in the processing plants. It also
has a group of experts and specialists in charge of particular problems in turn-key projects.

In Hanaqua Tech. Inc., the two major missions are: better animal cultivation and better
human nutrition. A shortage of fish protein supply is becoming very evident (Hasan 2001).
With the concept that promoting aquaculture is also a means to facilitate preservation of
natural resources, the company is strongly promoting awareness of the crucial role that
aquaculture will play in supplying the world demand for more aquatic products and richer
human nutrition.

After reorganizing, the company is now a major Taiwanese tilapia processing and exporting
firm. May to December is the peak season for tilapia export. On average, the company exports
a total of 4-5 containers (18-19 t/container) of processed tilapia monthly. Their gross income
reached US$2,850,000 in 2003. In addition to sashimi-grade tilapia fillets, normal grade,
instant quick frozen, instant water packaged and tilapia blocks, the company processes other
seafood products, such as shrimp (mainly black tiger and American white shrimp), seabass,
red-drum, and barramundi. Various combinations and proportions of seafood items, such
as squid, octopus, mussel and clam are also included, depending on customers’ demands.
In Hanaqua Tech’s other business, the volume of premix vitamins and essential minerals for
compound feed manufacturers also reaches US$2,850,000.

For the last 30 years, the assistant manager, Mrs Hsiao-Fan Kuo, has been working hand-in-
hand with her husband and is in charge of the main business. The company has expanded
its business scale by signing contracts with more tilapia farms, scouting for the right manager
of its main processing factory, modernizing its tilapia processing protocols, adopting HACCP
standards and developing its international export markets.

Hanaqua is dedicated to the objective of increasing the supply of fish and creating a good
working environment. Four principles defined by FAO for environmentally friendly aquaculture
are being implemented by Hanaqua in various activities in the industry, namely: (1) economic
viability, (2) proper technology, (3) environmental safety and (4) social acceptability.
Hanaqua’s long-term target is to develop a set of guidelines for the sustainable breeding of
aquatic organisms, including: use of the fry from artificial propagation; conditional use of
transgenic species and any genetically modified organisms; raw material either from land
or water; minimal use of feed protein from aquatic animals; humane handling of animals
cultured; and compliance with HACCP for processed products.

**G. Distributor of Processed Milkfish (Saba Fish) - Cuisine from Old Capital**

Recent developments in processed milkfish products—such as fishballs, smoked fish fillets, fish
sauce, baked, kabayaki (grilled), frozen fish bellies, frozen flavored whole fish and fish floss—
have created easy ways for the wider distribution of fish products locally and internationally.
Distribution is done via traditional market routes and modern websites. A majority of women
and men who are in charge of household food purchasing are becoming used to spending
more money on frozen food than they did before. The freshness and convenience of enjoying
frozen milkfish products seem much more attractive to consumers who live in metropolitan
cities far from milkfish culture areas in Chiayi, Tainan and Kaohsiung in southern Taiwan, than they do to those living near these culture areas.

There are two business ventures under this section. The first is the Fish and Shrimp House which sells processed milkfish and shrimp products. A group of women in Tainan, a southern county in Taiwan, started the processing of pond-harvested milkfish. They invited their family members to expand the business and now there is a nationwide network of sales. In every rest area along the express highways and major county roads, milkfish and shrimp products are usually available in tourist shops. Most customers will pick up a sheet or leaflet so that they can then easily visit the website and order, online or via telephone, more fish and shrimp products after going home. They may consume these themselves or send them to relatives or friends to once again enjoy traditional hometown foods.

The second business venture is a one-woman distributing firm of milkfish products run by Mrs Su-Feng Liu who originally comes from Tainan. Milkfish is an important aquaculture product for people in her hometown and it is the centerpiece of a traditional meal. However, using milkfish to make processed products, including burgers, sausages, hotdogs and even popsicles subverts tradition. She loves challenges, however, and enjoys subverting tradition! Mrs Liu established her online business with a major working capital of US$3,000 (NT100,000) for learning website design and how to set up an online platform through Taiwan SOHO who also provided minor capital for hiring other part-time helpers—frozen-food professionals, a dietician and accountants. She has created the convenient route of large-scale ordering of dried, processed and frozen milkfish products directly via her hometown relatives. Online or telephone orders are delivered within two days. The flexibility of this business model not only allows her to take good care of her family with three children, but also helps her make money in her spare time. She always goes to schools, firms and institutes to demonstrate how easy it is to cook the processed milkfish dishes. She provides creative and useful ideas for processing, such as flavorings, dressings, notes on nutrition facts and packaging. She also sends questionnaires to ask customers for their opinions of her products, to compensate for the fact that the online transactions provide no face-to-face contact between the buyer and the seller. This business is another good example of a “dream come true” due to a woman’s brave decision and effort in taking advantage of the Internet to pursue an unorthodox business. “Bigger is not better” Mrs Lu mentioned during our interview and she would rather enhance her service than expand her business for the long-term purpose of sustainability. Visit fishproduct.myweb.hinet.net

H. Family Factories of Mrs Chuan and Other Women at Tungkang: Traditional Grey Mullet Roe for Exportation

Every winter, grey mullet migrate along the west coast of Taiwan during their spawning season. Traditionally, there are taboos against women joining mullet fishing at sea. Women are not allowed to step onto the mullet fishing boats, or they will be blamed for poor harvests. However, women are the major workers in processing mullet roes in Tungkang, a typical mullet fishing harbor, and recently also in Tainan and Kaohsiung county where cultivation of sex-reversed female mullet has been popular under a joint project between researchers and farmers. Salted grey mullet ovaries are processed in the traditional way in the backyards of houses or in open fields of family factories. Processing mullet roes needs skill; great care is needed in salting, peeling of blood vessels and frequent turning during sun-drying of ovaries. High-quality standards are needed for these processing activities, before the mullet roe are sold internationally at a high price, with Japan as the major market.

Mrs Chuan grew up among a family of fishers. She learned how to manufacture the mullet roe before her marriage. After marriage, she decided to use this knowledge for earning money, since she could not go far from her household duties. Processing of mullet ovaries does not disturb her daily life. She fits this extra work into her free hours. When the mullet roe season comes, she hires several women helpers, but seldom men helpers. In her case, 2,000 pairs of
processed mullet roes can be produced in the peak season from November to February. The retail price of each pair ranges from US$40-80. This processing business is labor-intensive and requires skill. There is no possibility of using automatic tools or facilities to reduce the labor of the traditional work. Nonetheless, the woman owner is determined to continue this profitable venture.

I. A-TZE Snail Chain Stores: From Undervalued Snails to Popular Snacks

For many decades, sea snails have been one of the traditional snacks in coastal villages in Taiwan, and probably in other Southeast Asian countries. The profit earned from selling snails is comparatively low and seldom attracts men’s attention. Women and children used to share the heavy work of cleaning, cooking at home and selling the popular snail snacks along the roadside.

Over the past 15 years, Mrs Wan-Tze Young, a woman with creative ideas, started to make this business enterprising in several ways, including: (1) increasing the supply through the polyculture of snails in fish or shrimp ponds and collection or importation of wild ones from the coast in several islets; (2) using automatic washers and clean tap water for rinsing and cleaning snails; (3) utilization of cement-sand-water mixer to mix sea snails with additive ingredients such as hot pepper, garlic, green onion, soy sauce and standardization of the spiciness of the cooked snail product; (4) procuring certificates of excellence for processed seafood from the Council of Agriculture and Institute of Food Research and Development; (5) designing and using the registered logo for their products on leaflets, in chain stores, on uniforms and containers of snails over the last ten years; and (6) securing permanent arrangements with chain stores to sell the product. Three kinds of snails are processed, namely, the horn snail (Batillaria zonalis), areola babylon (Babylonia areolate) and screw turritell (Turritella tereb).

During our interview, we found that Mrs Wan-Tze Young hires only women for her sales people, these being mainly school students during their holidays. To ensure the products conform to sanitary standards, she hires middle-aged ladies. Male employees represent less than 10% of her total workforce and are mainly in charge of labor-intensive work, such as snail collection, cleaning and transportation. She has started to attend training courses, such as HACCP and product promotion. In the early phase of establishing her business, she depended on her brother, who studied in a medical school, for sample examination. Now, she sends samples to the Taiwan Fisheries Research Institute and the Institute of Food Research and Development for the authorized examination of product sanitary conditions. Visit www.kissfish.com.tw

It is now recognized that after proper processing and creative modernization, even originally low-profit sea products can help women create value-added products and thus earn monthly income of as much as US$3,000-5,000 year-round.

J. Yen and Brothers Enterprise Co., Ltd.: Distributor of Microwaveable Seafoods

The Yen and Brothers Enterprise Co. (www.dear2u.com.tw) has a philosophy that the sea resources are like an uncut diamonds. It seeks to uphold the concept and ideal of society, customers and employees uniting and prospering with one another. The company sales volume was around US$30 million in 2001. The company specialized in seafood and is committed to developing gourmet food that is fresh and healthy. In 2003, after gaining valuable experience in exporting and importing seafood, it started to organize a branch of six women and two men to introduce modern seafood processing and to distribute microwaveable seafood products through convenient delivery chains from farm/food processors to dining rooms. The Yens asked their women staff to consider women’s views and to concentrate on promoting ready-to-eat seafood dishes for family reunions and occasions such as Chinese New Year. At our interview with Chairman Yen Yuan-Po, we found that the Yens maintain their own unique business philosophy as well as apply vertical integration strategies and constantly innovate
and improve their competitive advantage. After the branch of microwaveable seafood dishes had been operating for only one year, the Yen head office announced that it had developed a program to help the company’s women, using all the professional skills available in their diversified seafood business. For example, staff in the branch of microwaveable seafood dishes may obtain assistance easily from Yen’s other divisions of wholesales, hypermarket sales, direct sales, logistics, overseas market and processing under the same head office. Including through the use of modern marketing strategies and computerized operations, it is hoped that the women staff will gain enhanced capacity in research and development and thus be better able to meet the requirements of customers.

Conclusion

Women are an important part of any nation’s human resources. The statistics from the Ministry of Interior Affairs (http://www.moi.gov.tw) in Taiwan indicate that the female to male sex ratio in the Taiwan population has been 105-110 to 100 in recent years. Therefore, slightly fewer than half of the Taiwanese population is male. All citizens receive compulsory education for 9 years and women have equal opportunities to higher education. Our interviews have highlighted that many women in Taiwan have more than 30 years of experience in traditional and modern processing of fisheries and aquaculture products, gained during the recent rapid development of the seafood sector in Taiwan. The past achievements of women in the sector have been productive and innovative but even more can be achieved in the future with appropriate encouragement for women. Our studies have shown that women’s capacity for innovation is often linked with their eye for natural beauty, and with their ability to produce nutritious and delicious food in home cooking. Excellent examples of women’s ingenuity in the processing and packaging areas include ready-to-eat microwaveable milkfish and tuna products. Women have also found that knowledge-based e-businesses are appealing to consumers and can assist their own capacity to operate from home or close to home.

In summary, in Taiwan, social acceptance, government policies and women’s growing business ambitions have all contributed to the growth of female entrepreneurship in the seafood and aquatic products sectors.

1. Social acceptance: Women’s involvement in capture fisheries is rather limited while in aquaculture, women mostly worked with men in hatcheries and pond farms (Chao et al. 2001). Based on our present study, we conclude that processing of fisheries and aquaculture products comparatively provides women more space and opportunity to develop their talents for artistic products, ideas on new healthy and convenient seafoods, and creativity in production and marketing concepts.

2. Government policies: Statistics provided by the National Youth Commission showed that 27% of women lacked the professional skills to start a business; 22% were short of capital; 17% had no access to market information; and 12% lacked confidence in themselves. The commission has increased its budget for small loans to encourage more women entrepreneurs. The Ministry of the Interior attempted to restore the balance by designing the “Flying Geese” Program through the Cabinet’s Women’s Rights Promotion Commission to encourage female entrepreneurs. This program is intended to organize short-term business training programs for women interested in becoming entrepreneurs. It turns the spotlight on women’s roles and gender relations in creative businesses of any kind, including processing of fisheries and aquaculture products. These initiatives were taken by government, communities and policymakers to ensure a sustainable, equitable and gender-just form of related development. The results show that women with original ideas did receive useful training, optimal guidance and financial loans to develop their own successful businesses, as highlighted in this study.

3. Women’s growing business ambitions: In this study, women in some of our case studies run online businesses to realize their business objectives as women entrepreneurs and to spread access to their traditional or special aquatic products, mainly from their hometowns. Their success lies not only in their unique business positioning, but also in their product
identities that are critical selling points that cannot easily be copied. Women in other case studies hope that their businesses can expand to include ecotourism and healthy services so that they can offer customers more than men entrepreneurs do. Most importantly, all proved to be able to handle their responsibilities to their families and also run thriving aquatic food or jewelry processing businesses. Overall, the efforts of these women have contributed to expanding the opportunities for processing of fisheries and aquaculture products in terms of artwork, gourmet foods, handicrafts and unique functional products. This diversification has increased the quantity, quality and convenience of products to meet consumers’ choices. Some businesses have globalized and some others still need more time to break through and become international.

In the future, marketing infrastructure and channels as well as economic analysis of existing processing systems or subsystems with significant contribution from women should be emphasized in order to improve the opportunities for globalization. To maximize the opportunities for the country, women’s opportunities must also be addressed. The difficulties faced by women during globalization should be studied to provide wise solutions and useful responses. The experiences among developed and developing countries where there is significant involvement of women in processing activities should be shared among countries. Taiwanese women have many achievements to share as well as much that they can also learn. Therefore, we propose that: (1) government should further help by training personnel in aspects of e-marketing, processing ideas, cost and return analysis, and expanding marketing channels of business; (2) relevant associations should be in charge of establishing complete and updated market information, such as monthly prices of eel fingerlings, marketable eel, processed eel, eel feed and eel oil capsule as a significant reference source for association members in respective industry sectors; (3) more women should be formally trained to join in and create the globalization wave and contribute fully to the sector, including in areas where their expertise and creativity may surpass that of men, such as in creation of new food and aesthetic products; and (4) more research is needed to evaluate and identify the future roles that government, research, manufacturing, retail and consumer sectors should respectively play to attain practical sustainability of the processing industry of aquatic products.

References


