

# RESPONDING TO GLOBALIZATION TRENDS IN FISHERIES: ASSETS OF PROFESSIONAL TAIWANESE WOMEN

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## Abstract

Globalization is an inevitable trend in Taiwan. The investment in human resources has increased over the last three decades, yielding a large pool of professionals, including women. Women became competitive professionals in Taiwan because many of them received sufficient education either to pass the licensing examinations or to enter the field of fisheries sciences. The licensing system and regulations protect junior and senior women experts from gender discrimination.

Professional women in Taiwan adapt as well as their male counterparts to the trends of fishery development. Major aspects considered in this chapter are as follows:

- Language and communication abilities obtained from schools or continuous education;
- Awareness about world trends: Asia-Pacific Economic Cooperation (APEC), World Trade Organization (WTO), etc.;
- Willingness to learn and adopt new technology to keep pace with other countries;
- Managing and planning to empower women colleagues in incremental steps towards globalization; and
- Involvement in international activities: voluntary or invited participation in conference; editing, reviewing and publishing in scientific journals; commercial trading; etc.
- Professional women in Taiwan have provided some significant opinions on future responses to globalization from personal, national and international viewpoints in reflection during this interview.

## Introduction

The contribution of the female labor force to Taiwan's economic development has been demonstrated in numerous studies. Part of the contribution can be assessed by the increasing rate of labor force participation by women in the formal labor markets. Based on governmental statistical reports, the female labor force participation rate increased from 39.2% in 1980 to 44.0% in 1990 and further to 45.8% in 2000. In contrast, men's participation rate decreased in these same years from 76.4% to 73.3%, and further down to 69.3%, respectively.

Women's contribution to Taiwan's economy is not limited to the labor input in formal labor markets. Since the majority of Taiwanese firms in manufacturing industries are small-scale and/or run by the family, both women's waged and non-waged labor are crucial in the production and reproduction of these firms or business units (Cheng and Hsiung 1993). However, women's participation in the informal labor markets and small-scale enterprises is not limited to manufacturing, commerce, or service industries. Previous studies showed that in the agriculture industry, for instance, because of the proximity of

farms and households, women's role in production of the family farm is also prominent (Du et al. 1999). Similar conditions also occur in the fishery industry. One study showed that most of the aquaculture businesses are small and run by families, mainly by couples (Kao 1997). Women have to work inside and outside the house.

The composition and role played by women in the fields of research and education in fisheries have been described by Chao and Liao (2001). More details about recruitment and employment, salary and benefits, promotion and dismissal, limits of present status and comparisons with other countries are explained in this paper. In responding to the transition to globalization in fisheries, special emphasis is given to understanding Taiwanese women's personal strategies in preparation for globalization and their national and international expectations. A semi-structured questionnaire was distributed to more than 50 professional Taiwanese women in fisheries, and among them, nine in the business field were interviewed in depth. This paper also intends to investigate the daily operations of the local aquaculture industry in Taiwan and women's role in the production and maintenance of the family business, and individual and organizational adjustments in this era of globalization in general.

## Globalization and Taiwan Fisheries

Globalization is about different regions conducting reciprocal exchanges in all dimensions including economics, social, and political (Nierop 1994). Here, the region represents a group of countries with similar cultures, religions, ideas or economic characteristics. Contemporary design in globalization is mostly driven by mainstream economics, represented by neo-liberalism (Ohmae 1990; Greider 1997). It stresses that the market is the solution to economic growth, and any country can find its position of comparative advantage. Such a system divides the work to yield high efficiency. Therefore, free trade will benefit all participants-be it either recent trade negotiation in treaty, including General Agreement on Tariffs and Trade (GATT) and WTO or some United States of American (USA)-led policies relevant to liberalism. All these aim to lower the cost and facilitate the flow of trade and investment.

In the past, however, many less developed countries achieved successful industrialization through strong and effective Government interventions (Chu 2000). Participation in the global market is necessary for less developed countries to benefit from advanced technologies, but free trade may hinder their economic development. The global capitalist system can exploit laborers and consumers in the name of globalization, to maximize the benefits of its enterprises, which may result in more uneven distribution of wealth among nations (Yang 2001).

Taiwan's economy depends heavily on American and Japanese markets. Its trading relationships have not extended much to other regions, such as Europe and Southeast Asia (Liu and Lin 2000). With an export-oriented economic system, Taiwan can benefit from free trade and lowered cost in the process of globalization. In fisheries, Taiwan is mainly a country of export with a strong competitive ability in international markets (Lin 2000). Taiwan liberalized trade in fisheries products except for mackerel, tuna and squid. With accession to the WTO, these products will face stiff competition from high quality and low-cost products from abroad. In response to this strong pressure from global markets, Taiwan has its special merits in producing live and high quality products. In Taiwan, more than 90 finfish species can be reproduced and cultured through aquaculture techniques (Liao et al. 2001; Liao and Chao 2001). Taiwan has developed strong potentials in aquaculture techniques, which is a highly organized system with many specialized subsystems, including the brood stock owner, the hatchery operator, the live and formulated feed supplier, the fry broker and the harvester.

Fisheries in Taiwan have experienced significant changes in the last few decades. As cited in a recent study (Liao and Chao 2001), production in the aquaculture industry increased for over forty years from 1950. However, it dropped almost 24% between 1990 and 1999. The decrease was even more dramatic in offshore fishing. The only fishing industry experiencing a continuous business boom over the last five decades is deep sea fishing. The drop in production in the aquaculture industry is also reflected

in the downgrading of Taiwanese ranking in the global markets. According to Liao and Chao (2001), Taiwan was ranked at 8th place in world fishery in terms of production quantity in 1990. However, Taiwan was ranked 16th in 1999, when production was only 76% of that in 1990. Apparently, Taiwan is losing ground to other foreign competitors.

According to a Government report, there were over 53,000 firms in the fishery industry in 1995, which represent about four percent increase from 1990. More than 95% of these firms were owned by individual owners, only 1.5% of them were registered as corporations, and 3.4% had dual partners according to the census of 1995 (DGBAS 1997). Of all the firms, close to 29% concentrate in coastal capture fishery, 23.5% in inland saltwater aquaculture, 20% in freshwater aquaculture and 16.2% in near-shore capture fisheries. The fishing industry employed over 212,000 workers. The average number of employees per firm was less than four persons. However, the aquaculture industry employed more than half of the workers in the whole fishery industry, in which about a quarter of them were employed in inland saltwater aquaculture and close to 24% in freshwater aquaculture. In marine aquaculture and off shore capture fishery, the average number of employees per firm exceeds 20 persons, respectively, 28.4 and 21.6 persons. Firm size in all other industries is less than five persons per firm. For instance, the inland saltwater aquaculture is the industry employing the largest number of employees in the fisheries, but its average number of employees is only 4.2 persons per firm.

Overall, the Taiwanese fishery industry is characterized by small-scale financial capital and labor force. As the majority of firms belong to single owners, the capital is clearly limited. Furthermore, the firm size in the fishery sector in general and the aquaculture industry specifically, is rather small. Family members, particularly the couple, play an important role in running the business.

## Working Environment of Taiwanese Women in Fisheries

In the past half-century, Taiwanese women entered the labor market much later and in fewer numbers than men. The investment in human resources has increased in the last three decades yielding a large pool of professionals, including women. In the field of fisheries sciences, women have gradually become competitive professionals because many of them received sufficient education to pass the licensing examinations. The licensing system and equal opportunity to education have protected junior and senior women experts from gender discrimination.

However, legislation to protect women with equal rights to work was only enacted in March 1999 after a long (13 years) debate. Compared to other developed countries such as England, Italy, France, and Japan, in which similar laws were established respectively in 1975, 1977, 1983, and 1985 (Chen 1999), this law comes late although it covers the general laborer, soldier, and people in Government and education. The legislation on fisheries and fishers organizations has no clauses or supplementary rules that actually discriminate against women. However, our interviews suggest that gender discrimination against women still exists in many workplaces. It can be described in several aspects as follows:

### 1. Recruitment and employment

Three decades ago, women were usually rejected several times before they were hired in the field of fisheries. They were hired because no men wanted the job. For research on the ocean, women were duly rejected without further consideration. This discrimination against women has caused occupational gender separation. The degree of discrimination in the fisheries sector is comparable to that in the livestock and forestry sectors, but is more significant than that in the agriculture sector.

### 2. Salary and benefits

Once women entered the fisheries sector, their salaries were usually equal to men's. However, about one or two decades ago, the prospects to be a female manager was relatively small and the average position level for women was low. In addition, men enjoyed more opportunities to continue their education, receive advanced training, or study abroad. Currently, many Taiwanese women in the fisheries sector are becoming more assertive to the kind of treatment they receive.

### 3. Promotion and dismissal

According to the study by Chao and Liao (2001), female employees in Taiwan received an average monthly salary of 70.1% of that of their male counterparts. One of the reasons was due to their shorter service periods. Women entered the labor market late, and most of them were not promoted before they retired. In addition, women are often over-qualified, and retained at basic levels; less than 35% are employed at advanced levels. A similar situation was found in the fields of research, education and fisheries where, however, dismissals were rare.

Although Taiwan has ratified the Convention on Human Rights, the involvement of Taiwanese women in the labor market is still fraught with problems. Strong public consensus has pushed the Government to pass and establish legislation for gender rights to work. The Gender Employment Equality Act was passed in the Legislative Yuan on December 2001; discrimination faced by female workers in their workplaces will be minimized. Additionally, Taiwanese women in the fisheries sector have demonstrated their capability in establishing role models, insisting that their work for 10, 20 and 30 years, is not only equal to the performance of men, but also represents a strong contribution to the field. Women's professions include the fields of molecular biology, cell biology, physiology, reproduction, aquaculture, disease, environment, ecology, conservation, local business, international trade, international cooperation, education, policy making, fisheries association, and even gender research.

## Designs of the Survey and Interview

We interviewed more than 50 female professionals in fisheries using a semi-structured questionnaire as shown in Table 1. Eleven respondents were interviewed from fields such as education, administration, and research, respectively. The purpose was to understand their background and their responses to globalization in their professional fields. In-depth interviews were conducted with nine women who directly participate in the fishery business. We also visited their plants and culture sites. These respondents were chosen through personal contacts and networks.

Relevant questions were asked on the major production or business activities, firm size, employment structure, their daily activities in the plants, and the potential impacts of joining the WTO on their businesses and adjustments. During the interviews, the respondents were allowed to freely express thoughts on their experiences in the industry; and additional questions were added depending on the progress of the interviews.

## Results of the Interview

In response to the survey, many of the women were very assertive and well prepared, some were conservative but cooperative, and a few were passive and retroactive. The following are the results of the questionnaire survey, a summary of their personal perceptions and actions, and future framework plans, especially from women involved in education, research and administration. A separate section presents the results from the business field, which is identified as the frontier of globalization.

### Personal perception and action

Interviews in the educational sector included professors from the National Taiwan University (NTU), National Taiwan Ocean University (NTOU), and National Sun Yat-Sen University. Most of the respondents were able to communicate fluently in second or third languages such as English or Japanese. Their self-assessments on awareness about global trends were quite diverse. Most of them expressed high levels of interest in learning new technologies and joining international societies (e.g. Friends of Museum, World Aquaculture Society, European Aquaculture Society, Asian Fisheries Society, etc.). Their actions in response to globalization involved referencing international journals, making frequent contacts with

international colleagues, conducting pursuits of international cooperation, and arranging exchange of visiting professors from around the world, including Japan, America, Europe, Africa and Asia. In addition, some stressed the importance of using computer software and information for global communication. Many of them have experiences in international conferences, organizing scientific societies, and teaching international students in fisheries. They encouraged other female colleagues toward globalization via teaching courses, advocating the importance of learning a second language and relevant professional skills, encouraging participation at international conferences, and in one special case, training only female assistants.

In areas of administration, administrative personnel, librarians and editorial staff from several research institutes—the National Science Council, Council of Agriculture, and Cage Culture Association were interviewed. Most have furthered their education in business (e.g. the knowledge-based economy), foreign language (e.g. English or Japanese), and IT (e.g. data bank). Some have admitted their deficiencies in communicating in foreign languages. Their knowledge of global trends come from the news, magazines, televisions, websites (Internet), and seminars on topics such as the knowledge-based economy, biodiversity, and so on. Some self-motivated respondents enrich their abilities in administrative management, assist researchers in finding new ways to locate references, organize study groups, participate in seminars on copyright in response to WTO and the Internet. Some supporting staff from the Cage Culture Association were eager to learn advanced techniques from the Norwegian cage culture system. Other actions toward globalization included joining research teams to foreign countries, and presenting in international seminars and exhibitions. Most of the respondents were support staff so they were less significant as role models for colleagues. However, some would ask their female co-workers to join them for further involvement in administrative seminars or advanced training classes, and some would train particularly female students. It is worth noting that some are expecting to lead others as their abilities have reached qualified levels.

In research fields, women majoring in animal science, biochemistry, food processing, fisheries biology, aquaculture, information, electron-photometry, and aquatic animal disease prevention from the Academia Sinica, Taiwan Fisheries Research Institute, Tungkuang Marine Laboratory, NTOU and National Museum of Marine Science and Technology were interviewed. Most of them are well informed about globalization due to work needs. Frequent contacts with foreigners, foreign country visits, interviews abroad, training of foreign students, and communication with international experts have enriched their personal experiences. Some new members get the information they need through literature, English radio and newspapers, and by developing international friendships. However, some with primary academic degrees are lacking in language abilities, resulting in difficulties to cope with globalization. Information channels to globalization were similar to those in the education and administration sectors. However, they share common concerns regarding market trends, the Hazard Analysis and Critical Control Point (HACCP) food system, and the Government's response to the issues. They learn new technologies from taking graduate courses, participating in commercial meetings on new technology, and looking up references in journals and websites. Some went to developed countries for further Government - or self-supported training in software and operations. Real actions toward globalization involved submitting publications to international journals, inviting foreign researchers to visit and exchange knowledge, inspecting global projects, reviewing international journals, presenting papers and speeches in international meetings (for example, World Aquaculture Society (WAS), APEC, Aquaculture Interchange Program (AIP), and Asia Productivity Organization (APO)). They have led colleagues toward globalization through lifetime learning, book reading, and study guidance. Some even made themselves role models by becoming international volunteers.

### Future response and scheme

In response to globalizing trends, Taiwanese women in fisheries surveyed in this study have organized themselves in various schemes from personal action, to governmental, and global action. These are summarized as follows:



### *Schemes of personal action*

Self-enhancement in professional training is important toward global actions. Global development in fisheries should be broadcast, and the interchange of information between Taiwan and global societies should be more aggressively continued. In all, enhancement in research and development (R&D) and application to the global level is essential for many Taiwanese women in fisheries.

### *Schemes suggested to the Government*

Research should be funded in broader aspects, especially for those funding agencies such as the National Science Council, Council of Agriculture, and Ministry of Education. More international exchanges of professional training for graduate students should be encouraged. Programs for recruiting foreign students should be established and enhanced. The Government should not only concentrate on short-term policy making, which maintains diverse cooperation channels, but also to expand the scale of projects and exploit global opportunities. The purpose is to improve the current situation, to revive activity, and to sustain good quality.

### *Global schemes*

Women who are well trained in both language and research abilities should be fully supported to participate in global affairs on fisheries. Development of high-quality international cooperation should be continued to support international activity and education of the younger generations. International cooperation projects between Taiwan and Australia, Canada, France, Netherlands, Norway, USA, and others should be renewed as far as possible.

## The frontier of globalization-business scope

In the following section, interviews with nine respondents are presented. These women are mostly distinguished figures in the business field of fisheries. Their careers and future in business are presented in detail from various aspects. Their backgrounds are first presented, followed by a comparison of their business structures. Their labor inputs and experiences in domestic gender division are also discussed. Finally, their reactions and plans of adjustments in the era of globalization, particularly following Taiwan's entry into the WTO scheduled in 2002, are presented.

### *Human capital: educational backgrounds and working experiences*

All nine respondents reside and have their business or career in the Southern part of Taiwan. All of them are Hokkiens and speak fluent Hokkien and Mandarin. They are all married and have more than one child. All nine respondents are in their forties. As to the educational level, unlike the traditional, stereotype low-educated fisherwomen of 20 years ago, all the respondents at least hold a high school degree. Specifically, one of respondent graduated from high school, two from vocational high schools, and one from a technical college. Two of our respondents have bachelor's degrees from national universities, one has a masters degree in Food Nutrition Science from Fu-Jen University, while another has a masters degree in Chemistry from the University of Texas A & M, United States of America (USA).

Only one of the respondents holds a Ph.D. She obtained her doctoral degree in Marine Biology from the University of California at Davis in the USA. She is a research fellow and currently the director of Tungkang Marine Laboratory (TML), an affiliation of Taiwan Fisheries Research Institute (TFRI).

None of the respondents are new to the industry. Respondent A has the shortest career among the nine respondents. She used to work as an accountant in the company, just as most wives did in the family business of Taiwan. After her husband died, she took charge of the business by herself. Five of the nine respondents have been in the business for more than ten years and two had about 20 years or more of working experience.

### *Organizational characteristics: family business, couple business*

Among the nine respondents, four of them are so-called Lau-Ban-Liang (meaning "the wife of the boss" in the local dialect), working in the family business together with their husbands (the boss and so-called Lau-Ban). One respondent, Respondent F, has her own aquaculture business and owns a fish wholesale store in Kaohsiung City. Her husband, however, is an official in the Fishery Section of the City Government of Kaohsiung. The other respondent, Respondent G, who just returned from overseas will join her husband's business eventually. Respondent A herself is the Lau-Ban (boss) after she took over the family business from her deceased husband four years ago. Respondent H owns a couple of companies, one of which exports processed fishery products to foreign markets. Her husband is a physician on an islet off Pingtung County. Respondent I has her own career in marine biology and her husband is her colleague. Therefore, except for Respondent H, all other respondents worked as partners of their husbands in the family business or in closely related professions. In Taiwan, the business of aquaculture is typically a family business and, more specifically, a husband-and-wife business.

### *Work schedule: intensive labor and long hours*

Very few industries require such long working hours, intensive labor input, and meticulous work procedures, as does the aquaculture industry. Most of our respondents have to visit the culture sites first thing in the morning. They usually work the whole day and at best take a short nap in the afternoon. One respondent, Respondent B, told us that feeding the fry is an important job and needs much care. If someone were hired to feed the fish, the worker would simply spray the feed into the pond to keep the fish from starving. On the other hand, if she were to do it herself, she would carefully observe the sites and the reactions of the fry when she fed the fish. Like most of our respondents, Respondent B and her husband only hires one or two laborers, who are either their neighbors or foreign workers, for pond cleaning.

Many of our respondents indicated that their working hours could extend to as much as 12 hours in any typical day. For instance, Mrs. E wakes up around six o'clock every morning and usually works until six o'clock in the evening. She sometimes stays until midnight to inspect newly arrived fish in the wholesale market. When she received us at the factory, Mrs. E apologized a few times for the interruptions that occurred whenever she answered telephone calls or the questions from the workers.

Some respondents told us that women are especially suitable for working in aquaculture business for various reasons. Respondent C indicated that women are careful and patient. They are willing to spend time to observe the growth of fry but men usually do not follow procedures carefully. Respondent D also told us that wives do better in applying the medicines and feeds compared to husbands, as they are more gentle and careful. Respondent E trusts female workers more than male workers in doing the sorting of different types of fish.

Most of our respondents felt that they could not trust other people to do the job because time and care are strictly required in this business. Even if they were to hire someone to do the job, the salary would be rather high considering the long working hours and intensive labor. Also, most owners cannot afford to pay such high labor costs. Therefore, improvements in technology and financial support from the banking system would certainly lighten some burdens of the family and increase its economic scale.

### *Gender division and family decision-making process*

Like many other Lau-Ban-Liang in the family business of Taiwan, the respondents usually have double burdens of work. They not only take care of the fish and shrimps, but they also have to look after their families. However, most of them did not complain about their burdens. Since their husbands are still working in the ponds while they were cooking or doing the laundry, the wives treat the gender division of labor as natural.

A survey on family decision-making process and outcomes in the aquaculture industry found that the couples make most of the business decisions together, such as purchasing or renting new culture sites (Kao 1997). According to the survey, 90% of the respondents were satisfied with the decision-making pattern in their households. The findings of our interviews generally reflect similar reactions.

However, when faced with the dilemma between work and family, the respondents tend to put the family first, even though most of them are already successful entrepreneurs or professionals. Respondent I is one of the examples. During the interview, she indicated that women always belong to the family. She said that if she wishes, she could be more aggressive because she had many opportunities to socialize with state officials from the central Government. However, since she wants to be with her husband and children, she declined to do that, to be promoted, or to go to other places. Respondents H and D both gave up their stable teaching jobs in Taipei and moved to Kaohsiung with their husbands after the latter failed in their businesses. Respondent D said that she almost divorced her husband when he became financially bankrupt. However, after being persuaded by her mother and parents-in-law, she eventually agreed to follow her husband to start a new life.

Du et al. (1999) studied the role of women in farming and found that there were conflicts between work and family duties. In their study, many respondents indicated that they had wished to attend some agriculture extension courses during the night, but they usually had to give up the opportunities to take care of their young children. Some of the respondents also expressed the same feelings. They are aware that local fishers associations often offer night courses but they, as women, had no time to attend. Men, if they want to, usually could go to such courses. Respondent D once planned to attend an international fish exhibition being held in Singapore, but had to cancel her plans because someone in her family fell sick.

#### *Adaptation in the era of globalization*

After many years of odyssey, Taiwan is expected to join the WTO in 2002. Like many other primary products, Taiwan's aquaculture industry is facing challenges from both imported products and exploration of international markets. As a matter of fact, the Central Government provides little help for businesses to meet these challenges. It is left to the owners themselves to resolve the dilemmas. A few studies (Lee et al. 2001; Chiang and Lien 1996; Lo and Hwang 1996) discussed the impacts of globalization and foreign competition from technical and managerial aspects, and on the Central Government's role. However, they rarely mention women's roles in the process of adjusting to globalization. Based on our interviews, the issues of language, personality, and willingness of future generations to inherit family businesses seem to determine the levels of awareness and adaptation for the respondents.

Among the respondents, Respondent I is familiar with English readings and writings because of her profession. She is rather passive in terms of seeking to understand the impacts of WTO on Taiwanese aquaculture businesses because she is the chair of TML, and most of her time and energy has been devoted to administrative work. However, her job requires constant contact with industry and governmental officials so that she is somehow aware of the impacts of imported fisheries products on local businesses<sup>1</sup>. During our interview, she indicated that Taiwan has been facing severe competition from China in exports of eels and groupers in recent years. Taiwan's fisheries businesses have to keep developing high-quality fish products, such as easy-to-cook or boneless fish meat, in order to maintain the market. Therefore, the role of fisheries scientists in Taiwan is important in the development of the aquaculture industry because of the advantages they have in language ability and knowledge in this field. Their importance would increase when Taiwan becomes a member of WTO, due to the lack of real aid and support from the State.

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<sup>1</sup> The laboratory has good relations with the owners of private companies and farms. For instance, one woman whom we interviewed took the chance to ask research fellows in the lab questions about her business. Also, on our way to interview, we noticed that many of our respondents have long-time friendships with the scientist who led us to the respondents' residence.



Like the situation in the farming system, aging has been a serious problem in fisheries. According to a governmental survey, the average age of a majority of the workers is close to 52 years old in single-owners' firms in fisheries (DGBAS 1997: 20). One of the reasons is the lack of interest of second generations in taking up the business. According to the same report (DGBAS 1997:21), close to 70% of respondents (single-owners) indicated that they have no one to inherit their businesses.

Having the next generation to inherit the business does encourage the owner to be more aggressive and willing to learn languages and computer-related knowledge. Respondent D sent her son to China to work for a marine technology firm. With a bachelor's degree in sociology, she is actively learning English. She also proudly announced that she is learning how to use "e-commerce" (i.e., electronic commerce). Respondent C and her husband have two sons, both of whom majored in marine biology and are interested in aquaculture businesses. Her elder son already has his bachelor's degree and is working full-time for his parents.

The respondents mostly face challenges from Chinese competitors. The cases of Respondents C and D showed that markets could be expanded in countries that use the same language as Taiwan. Thus, investments of fisheries in China would be more convenient for local business people. In the survey, Respondent E is the only one who not only owns marine-culture sites, but is also a fish wholesale dealer. She also exports some products to Singapore. In her case, the language barrier is not a problem in her overseas expansion.

## Conclusion

In the last 30 years, Taiwanese women in fisheries, have become better educated than before. Their families have provided them with opportunities to develop their potential to work as professionals in the fields of research, education, administration, industry and trade. More importantly, the women themselves work hard and efficiently, and thus respond well to challenges.

Their advantages in response to globalization are summarized below:

- Easy access to global trends with mass media, education and training courses;
- Being highly alert in response to the impact of globalization;
- Willingness to improve language ability, to learn new knowledge, and to adopt advanced technologies (e.g. e-science and e-commerce); and
- Strong ambitions to expand foreign markets.

However, some drawbacks hindering the process may include:

- Lack of continuity of the business-no one to inherit his/her businesses;
- The need for more efficient and responsible business associations in the industry sector to provide sufficient information and measures in response to changing world trade; and
- Lack of human resources or supporting staff to share their heavy work.

Taiwanese women in fisheries have to adapt themselves to survive. They cannot live and work alone but need help and support from their families as well as the Government. In addition to the individual's problems in adaptation, the industry of fisheries has a general, organizational problem. The average size of a firm is about four persons, which results in small production scale and limited capital. This business structure affects the ability of these firms to expand or even to compete with other large-scale companies. Therefore, to assist local fisheries in sustaining outside challenges, the Taiwanese Government has to be more active in providing both technological and financial support. Thus, owners of family businesses would rely less on their own labor inputs, but pursue the expansion of the company. Making bank loans available and lowering interest rates would provide them more incentives for expansion and merging. In facing the challenge of globalization, the Government cannot be absent. Contrary to the predictions of the neo-liberal economists, the nation-state would need to intervene more but not less in the era of globalization.

**Table 1. Structure of the questionnaire.**

	Extremely deficient	Deficient	Aggressive	Extremely aggressive	Others	Examples in short
1. Communication skills						
2. Awareness of global trends						
3. Pursuits of new technologies						
4. Leading and guiding peers						
5. Practical actions						
<b>Scheme</b>						
1. Personal action						
2. From Taiwan Government						
3. Worldwide						
<b>Personal Information</b>						
1. Personal experiences? _____ (dated back) _____						
2. Highest academic degree? _____						
3. Years of services in Fisheries? _____ years						
Name: _____						
Phone: _____						
Fax: _____						
E-mail: _____						

## Acknowledgements

We are indebted to the organizing committee of the special session Global Symposium on Women in Fisheries headed by Meryl Williams in the 6th Asian Fisheries Forum for inviting us to present the paper. The international organizing committee of the 6th Asian Fisheries Forum, headed by I Chiu Liao, is acknowledged for bringing together both women and men scientists who are concerned about the issue, of women's role in Asian Fisheries. Contributions of all respondents and assistant staff from the Department of Fishery Biology, Department of Aquaculture, and TML in TFRI that made this paper possible, are highly appreciated.

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