

# Boosting the Capacity of Young and Female Researchers for Achieving Sustainable Fisheries in Southeast Asia: Initiative of Hokkaido University, Japan

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This article highlights on the initiative of Hokkaido University, Japan in enhancing the role of young and female researchers through the “Fostering Program for Young and Female Researchers in Sustainable Fisheries Sciences in Southeast Asia” under the JENESYS exchange program with funding support from the JSPS, and in collaboration with relevant partners including the Faculty of Fisheries of Kasetsart University (Thailand), Walailuk University (Thailand), the Asian Institute of Technology, and the Southeast Asian Fisheries Development Center.

In an effort to create a “strong solidarity among the Asian countries” through the promotion of mutual understanding among the youths in East Asia, the former Prime Minister of Japan, H.E. Shinzo Abe launched the Japan-East Asia Network of Exchange for Students and Youths (JENESYS) during the Second East Asia Summit in January 2007. The five-year youth exchange program which was started in 2007, received a total budget of 35 billion yen from the Government of Japan. Since then, 6,000 young people from the East Asian countries had been invited to Japan every year to take part in the exchange program.

Under the JENESYS initiative and through the “Exchange Program for East Asian Young Researchers” implemented by Japanese universities and institutions, the 12-month **Fostering Program for Young and Female Researchers in Sustainable Fisheries Sciences in Southeast Asia** was initiated by the Faculty of Fisheries Sciences of Hokkaido University of Japan in 2009 with financial support from the Japan Society for the Promotion of Science (JSPS). The Fostering Program which was completed in September 2010 had forged the collaboration between Hokkaido University with important partners in Thailand such as the Faculty of Fisheries of Kasetsart University, the Asian Institute of Technology (AIT), the School of Agriculture Technology of Walailuk University, and the Southeast Asian Fisheries Development Center (SEAFDEC). With the objective of developing high-caliber human resources and creating a regional science and technology community in the East Asian countries, the activities under this Fostering Program included the participation of 14 young researchers from the aforementioned collaborating institutions in short-term cooperative research, study tours, lectures, relevant symposia, and the like, which were conducted at Hokkaido

University. As an end-of-program activity, the Wrap-up Workshop was held at the Faculty of Fisheries of Kasetsart University in Bangkok, Thailand on 26 August 2010.

## Exchanging Knowledge, Exchanging Culture

Through several activities conducted in Japan and also in Thailand, the Fostering Program envisaged that exchange of information/knowledge and culture among relevant partners would be fashioned. Thus, the program envisaged that the students, professors and staff should exchange opportunities that promote understanding and tolerance between cultures. Ideas, values and experiences of the young and female exchange researchers had been shared through scientific related activities. Through the Fostering Program, the networking opportunities of Hokkaido University has been expanded by providing mentorship throughout the various stages of the research period of the young and female researchers. As further envisaged, a side to side mutual understanding had been established.

Within the scope of the Fostering Program, two main discussion avenues were set in motion in Japan. The first was aimed at learning the experiences accumulated in Southeast Asian academia, governmental and inter-governmental organizations on gender-equal society, which was explored



Fostering Program participant and SEAFDEC Researcher, Dr. Nathinee Sukramongkol presenting a paper during the Seminar on Human Resource Development for Female Researchers and Lessons Learnt from Southeast Asia on 2 July 2010 at Hokkaido University, Japan

during the international seminar on “*Human Resources for Female Researchers and Lessons Learnt from Southeast Asia*”. The second was the international symposium on “*Role of Young and Female Researchers for Achieving Sustainable Fisheries in Asia*”, which underlined the role of young researchers in the context of sustainable fisheries.

## Promoting a Gender-Equal Society

Records have shown that gender imbalance is quite common in most Japanese universities, with the rate of female researchers being much lower in science and technology-related faculties, especially in the fisheries faculties where the number of female instructors and professors has been observed to be very few. At the Faculty of Fisheries Sciences of Hokkaido University, for example, women composed only 2.4% of the academic staff. In contrast, in many universities and institutes in Southeast Asia, there are high percentages of female researchers and professors. Recently however, it has been noted that the number of female undergraduate and graduate students at Hokkaido University is rapidly increasing. The female scientists from Japan and Thailand could therefore serve as role models for encouraging more students to continue their careers in science, especially in fisheries science. “Gender-Equal Society” has been a major concern dealt with under the Fostering Program, focusing on the scenario of research institutions in Thailand. Nevertheless, other institutions in the Southeast Asian region could also learn from the experience of the 12-month Fostering Program.

In Thailand, the report of the National Research Council of Thailand (NRCT, 2010) showed that in 2009, the female researchers comprised 52.08% of the total number of Thai researchers. Majority of them are involved in the field of medical sciences (66.27%), chemical and pharmaceutical sciences (64.01%), and social sciences (58.43%). Moreover, a few female researchers are involved in political science and public administration (38.12%), law (33.03%), and engineering and industry research (17.24%) as shown in **Table 1**. In many instances however, female researchers

are largely accepted as project leaders in view of their professional efficiency and legitimacy.

It has also been noted that the Thai female researchers like in many countries in the region, are being confronted with the problem of balancing between their research work and private life. In the Asian culture where women have to take priority on family concerns has affected in a way, their research endeavors as they are confronted with daily household tasks and childcare responsibilities. Moreover, teaching and administrative loads are also affecting the female researchers in the academia, reducing their time for research activities, as they have to pay more attention to many things at the same time. Female researchers also tend to be less assertive than men due to cultural norms, resulting to certain difficulties in making decisions in terms of prioritizing families over their careers. In addition, female researchers seem to be less mobile than men due to family demands, making it more difficult for them to enjoy both. Nonetheless, still a number of female researchers in Thailand have overcome the major constraints and become very successful in their fields of endeavor.

## Status of female researchers at the Department of Fisheries of Thailand

Through time, Thai women have gradually altered their role particularly in the government sector. With more women now armed with enhanced literacy and the fact that women are already accepted in higher positions, many government agencies and also some private sectors are now attempting to promote gender equity within their organizations. The Department of Fisheries of Thailand in particular, is now administered and managed by female executives, such as the current Director-General and two Vice Director-Generals. In addition, the country’s fisheries institutes and development centers are mostly run by female researchers, which had been justified by the fact that women are adept at managing their homes and thus, could also manage their offices more effectively. Although, most of the executives are women but men still have high proportions at the primary-level positions.

**Table 1. Number of Thai researchers based on gender and fields of expertise**

Fields of expertise	Male		Female	
	Number	%	Number	%
Medical sciences	5,003	33.73	9,831	66.27
Chemical and pharmaceutical sciences	998	35.99	1,775	64.01
Social science	1,819	41.57	2,557	58.43
Political science and public administration	1,016	61.88	626	38.12
Law	511	66.97	252	33.03
Engineering and industry research	3,772	82.76	786	17.24

Source: NRCT (2009)

Therefore, female researchers should beat the men in terms of academic and scientific achievements and qualifications in order to land in high positions and retain such positions. Although women have had more successes in entering and obtaining promotions to the highest ranks of some organizations, but the gender composition remains magnificently skewed towards being male-dominant especially in the primary stages of professional and career development.

### **Role of women researchers in the Southeast Asian Fisheries Development Center of Thailand**

The Southeast Asian Fisheries Development Center (SEAFDEC) is an intergovernmental organization established in December 1967 for the purpose of promoting sustainable fisheries development in the Southeast Asian region. In Thailand, SEAFDEC has two main offices: the Training Department and the Secretariat, where women make up 38% of the total number of researchers. The female researchers are mostly working in the field of coastal fisheries management, marine capture fisheries, socio-economics, policy and program coordination, training, extension, and oceanography.

The major challenge that the women researchers of SEAFDEC faces is in the aspect of balancing between their career and private lives, especially since some of them have to be away from home due to longer period of time at sea during surveys and study cruises or during international meetings. Fortunately, the SEAFDEC women researchers are able to carry out the multiple roles in their careers with strong support from their families. Although at present, men are still dominant in SEAFDEC with only about one-third of the leading positions in management and research occupied by women, the number of female employees in SEAFDEC is growing as there are equal opportunities for both genders in its employment processes. Thus so far, there has always been room for bringing in better productive contributions, and means of personal improvement and career advancement for women in SEAFDEC.

### **“Why Thai female scientists succeed in the career market?”**

The increasing trend of Thai female researchers must have been brought about by a number of reasons, one of which is financial. In a society where every adult member of the family should earn income not only for personal expenses but also to support other members of the family who could not earn income such as the children and old parents, adult women are also forced to work. In fact, it has been noted that most women in big cities like Bangkok and Chiang Mai seem to remain single or maintain independent status

because of the pressures from their work which require their full time and effort.

Thus, the number of Thai women in many organizations/institutions as well as in the career market has been noticeably increasing leading to high competition in some aspects. For example, women had to enhance their capabilities especially that the traditional criteria used to screen and choose applicants for employment include high academic grade point average (GPA), good working experience, skills in English (written and spoken), well-known university attended and graduated from, emotional intelligence (EQ), and communication skills. Therefore, in order to compete with male applicants, females are pursuing further studies and enhancing their capacities to become well-qualified and be employed in the midst of stiff gender competition.

Furthermore, the female character of having high level of responsibility, more flexibility, and high ability to do other things more than routine jobs could also be “plus” factors for female applicants’ increased probability of landing in jobs and fulfilling organizations’ objectives. However, considering that the other role of female scientists as “mothers” could also impede the proper management of their time, many female scientists are now comfortable with being “scientists” only where they can work independently and not necessarily as “mothers” where they have to be contented with working as part of a team. Nevertheless, many single and married females are capable one way or another, of getting advantage from being women in order to become successful scientists.

### **Enhancing the Role of Young and Female Researchers in Achieving Sustainable Fisheries**

Fisheries science plays an important role in conserving the aquatic environments, sustaining the aquatic resources, promoting safe food supply, and developing the local economies. It is for these reasons that education in fisheries science is vitally important to all nations. Considering that the goal of “sustainable fisheries” should be incorporated in all aspects of fisheries science education and research, the role of young and female researchers should be enhanced and their potentials recognized through the promotion of international exchange and academia-industry collaboration. This has been the main concern of the Fostering Program which succeeded in addressing the issue through the conduct of short-term research activities that aimed to stimulate further progress in realizing the concept of sustainable fisheries. Such efforts had been enhanced through education and international collaboration.

## Discussions and Recommendations

### **International collaborative education and research for the development of fisheries and related industries for food security and food safety**

Strategies to enhance international collaboration among academic and research institutes should be developed in order to ensure food security and food safety from the fisheries industries and related activities. Thus, in the seafood channel from “source to plate”, steps must be carefully developed in such a way that many factors are considered, such as sound environment, sustainable production, and responsible food chain/logistical system. Hence, it is necessary to enhance capacity building in all aspects involved in the production process.

Moreover, the end-users such as consumers are now becoming more anxious and concerned about safety of food. Such concern has accelerated the need for best practices in the food industry. The industry therefore has to expand financial liability, address technological challenges, and improve marketing and knowledge networks through trained and efficient manpower. This means that there is greater need for all educational and research institutions to develop comprehensive and collaborative methods in order to produce effective and efficient work force in the fisheries sector considering that the “source to plate” management should be implemented in the most proper way. Moreover, achieving food security and safety by one country could be secured through the effective collaboration among neighboring countries.

### **Sustainability of fisheries science and ecosystem conservation**

The increasing trend of aquatic resources degradation and higher demands for food fish in the world should be properly addressed and thus, appropriate actions should be advanced for the sustainability of fisheries production for food security, taking into consideration the need to strike a balance between resource protection and utilization. Many scientists proposed various ways of maintaining the fishery resources based on their knowledge in science and technology. However, the sustainability of fisheries science and aquatic ecosystem still need to be assessed considering the complexity of the system. A possible solution at the current situation could be by accounting the status and potential limits of the carrying capacity of the ecosystem. Furthermore, it is well recognized that the possible scenario of the carrying capacity corresponds to the changes in the ecosystem and *vice versa*. The fisheries industry should therefore put more emphasis on economic efficiency and food security within the context of the ecosystem. In order

to adapt to such changes, there is a need for a paradigm shift from the traditional fisheries science to ecological fisheries science in order to protect the ecosystems and secure human food resources for enhanced human well-being today and in the future. The Fostering Program therefore promoted adaptive management and precautionary principles that comprise the essential components for sustainable fisheries management based on the ecosystems approach.

### **Fisheries development through collaboration of the academia and fisheries-related organizations**

Each academia and institution usually develop collaboration with interested and target partners. In the case of the Fostering Program of Hokkaido University, the development of more partnerships was explored while the capacity of young professionals to serve other partners and/or promote mutual interests had been enhanced. In the like manner, collaboration in fisheries education and research should aim to establish close collaboration among partners in promoting sustainable fisheries development.

Recently, there have been emerging changes in the educational policies including fisheries education in the ASEAN region. Given the fact that education comprised a major part in the building of the ASEAN Economic Community (AEC) which is envisaged to be achieved by 2015, many challenges lay ahead for the fisheries educational institutions in the region. However, the concern on fewer students opting for fisheries education should be addressed considering the expected free flow of skilled labors under the AEC 2015, while allocations of scholarships and grants for capacity building in fisheries education had been decreasing.

Through several efforts, strong graduate degree training programs should be ensured in the region. From the outcomes of the Fostering Program for instance, suggestions were made on the need to establish “sandwich” graduate



Participants in the August 2010 Fostering Program Wrap-up Seminar at Kasetsart University in Bangkok, Thailand



Dr. Arai explaining the Fostering Program during the Wrap-up Seminar in August 2010

programs<sup>1</sup>, develop regional center of excellence model, intensify distance learning, and conduct English language training programs, among others. Now, the challenge would be on how to make these suggestions become reality and practical. Since these issues concern human capacity building especially in the areas of fisheries sciences where less interest had been observed among the youth, connection, networking and collaboration should be therefore enhanced to address such realities.

Several national/international research and academic institutions have contributed to the development of the fisheries sector, SEAFDEC is one of such institutions. In most cases, activities conducted by such institutions had been enhanced through collaboration with relevant agencies and organizations, particularly in promoting human capacity and conducting research and development activities in various fields to serve the requirements of the fisheries-related industries. For example at the international level, SEAFDEC has enhanced its collaboration with several institutions/organizations in terms of technical as well as financial support and cooperation. Specifically, the collaboration between SEAFDEC and research/academic institutions in Japan, Thailand and other countries in the ASEAN region has been in the areas of human resource development in fisheries, research and development as well as in information generation, sharing and exchange.

1 A “sandwich” graduate program usually involves students initiating graduate programs in their own countries by taking classes and defining their thesis/dissertation problems, then carrying out their thesis/dissertation research in foreign universities, and finally returning to their home countries to finish their studies and present their thesis/dissertations, and receive the corresponding degrees from the foreign universities. This system could be exemplified by the initiatives being promoted by the JSPS.

In addressing the need for sustained enhancement of the capacity of the region’s young researchers, fisheries institutions in the region could make use of the existing programs carried out by other organizations. For example, the Training Department of SEAFDEC bi-annually conducts a training program which caters to the university students of Thailand. The two-week Human Capacity Building for University Students is aimed at developing the skills of the students in responsible fishery practices and methods, and envisaged that the students can apply the experiences gained from the training course in their works in the future. This program could be one of the practical approaches that the region could adopt, considering the existing facilities and modalities. Therefore, cooperation among the institutions should be forged and/or strengthened in order to avail of the partners’ existing programs and thus, save on unnecessary costs.

Considering the possibility of adapting the aforementioned capacity building approach, other institutions in the ASEAN could be tapped to support any collaborative human capacity arrangements, such as for example, the ASEAN Foundation based in Indonesia and the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA) in the Philippines. The possibility of obtaining financial and technical support for the human capacity building activities of institutions in Thailand could be explored with such organizations.

It is noteworthy to consider the existing dearth of fisheries-related expertise in Southeast Asia. The initial result of an ongoing survey conducted by SEAFDEC showed that there is the need to put a plug on the continuous decreasing trend of the region’s expertise in the fields of taxonomy, physiology, fishery laws and regulations, cross-cutting issues including climate change, and other areas. Since it would be expensive to start training the necessary replacements, cooperation and collaboration would be necessary to fill the gap. Considering that in the development of national policies, justifications would be futile if these are not backed by scientific findings, therefore it is necessary that the aforementioned inadequate expertise in fisheries science should be immediately addressed, before blame would be put on the academic sector for not providing the required information based on scientific findings.

Since the Fostering Program of Hokkaido University was already completed in September 2010, the collaborating partners under the Program were encouraged to explore the possibility of continuing the exchange program even if this could be considered under some forms of bilateral arrangements. Thus, establishment of a network of educational institutions in the region would be necessary

as this could pave the way for human capacity building in the region. This is all envisaged that in the end, the promotion of sustainable fisheries development in Asia could be enhanced.

## Comments from Some Fellowship Recipients of the Fostering Program

Getting an opportunity for short-term research under the Fostering Program of Hokkaido University, Dr. Natinee Sukramongkol, Fishery Oceanographer of SEAFDEC/TD said that, *“the knowledge and experiences gained from the program are very useful to support the program of SEAFDEC on deep-sea resources exploration and to the training workshop on the impact of fishing to the deep-sea ecosystem on 16-20 October 2010 in Brunei Darussalam”*.



Participants during the Wrap-up Seminar in August 2010

*“I learned how to properly collect data and the ways for students to be good researchers. In addition, I also obtained not only technical knowledge, but also the tradition and language of Japan”*, Dr. Jariya Kankamnerd, Policy and Program Officer of the SEAFDEC Secretariat said. She also mentioned that *“I would now be able to use the outcome of my research study under the Program in my reference studies in the future. Although my research study is not yet finished, I can continue the connection and network among Thai and Japanese researchers to come up with good result”*.

Mr. Pavarot Noranarttragoon, Ph.D. student from AIT said *“I learned a lot from my supervisor, not only technical knowledge but also the tradition, culture, and society of Japan. For the technical knowledge, I learned about marine fisheries, fisheries management, and fisheries researches in Japan. I met many researchers from several countries and discussed about technical researches in their countries as well. After this Program, I can integrate the experience and knowledge I gained to improve and develop the researches for sustainable development of the fisheries sector in Thailand. Moreover, the network and relationship established between Thai and Japanese researchers should be sustained so that if there are updated information and technology available, we can quickly communicate. In the future, I hope to continue sharing my experiences and knowledge and also learn more on the technical aspects in Japan”*.

*“The opportunity to work with Japanese researchers at Hokkaido University have definitely deepened my understanding and expanded my vision related to bioremediation techniques used in aquaculture. The program benefits me as a teacher, since the knowledge I gained from my short-term stay in Japan can improve my teaching skills and I have shared my experiences with my colleagues and students. Besides, this program also promotes the linkage between Thai young researchers into the international research network”*, Dr. Idsariya Wudtisin, Lecturer from Kasetsart University said.

## Conclusion

The activities under the Fostering Program were reviewed and concluded during the Wrap-up Workshop of the Fostering Program held in Thailand, where the approach to *“Promote Sustainable Fisheries Development in Asia through Academia and Fisheries related Organization Collaborations”* were fruitfully discussed. During the Workshop, it has been noted that one of the most important outcomes included the fact that young and female researchers were offered the opportunities to explore the larger scientific

discipline. Moreover, clear signs of being more focused on gender issues were also observed from the outcomes of the Program. Thus, proposed future programs should ensure that women should have the same opportunities to contribute to science as those enjoyed by men. Furthermore, in order to achieve gender equity in research/science, it is necessary to increase women's access to education and empower them with the required knowledge and skills.

It is in this important aspect that the academia can play a major role, as they represent the scientific elite and are thus held in high respect. Any related future program should also explore the options and challenges associated with future management of sustainable fisheries, by seeking lessons from the academia and from related fisheries development organizations such as SEAFDEC.

From the fisheries management point of view, hunting for ways to conserve and utilize fisheries resources has become a must, and there is no simple way to manage fisheries in sustainable manner except through enhanced education, which is clearly the main tool to achieve such vision. In addition, a wider scientific understanding of the ecosystem-based approach will contribute to a better scenario and linkages between each element of a system. Finally, the suggested solutions could include strengthening collaboration among fisheries educational institutions in the region, sharing of resources and expertise, and increasing the regional exposure of students to better prepare them for different cultures and languages, and that any relevant consortium should take up these tasks and work closely with their collaborating partners in order to further promote sustainable fisheries development through enhanced educational processes.

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