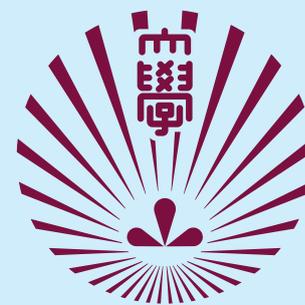


Annual Report of JDS Program

Graduate School of Bioresource and Bioenvironmental Sciences Kyushu University



Vol.10 (2012)

1. Purpose of the JDS

The purpose of the JDS program, Japan's Grant Aid for Human Resource Development Program, is to offer the research opportunities to the prosperous young scientists, business persons, and government officers, who may take the official initiative in their home countries, at the higher educational institutions such as Kyushu University. The objective of this program is to develop strong human resources, build a stronger personal and institutional collaboration, and furthermore, enhance the prospective relationship between Japan and their home countries.

The JDS program at the Graduate School of Bioresource and Bioenvironmental Sciences at Kyushu University has launched in 2001. In 2012, 29 students from four countries, namely Lao PDR, Viet Nam, Cambodia, and Myanmar, are enrolled. They study and conduct research in the individual laboratories in our graduate school, and prepare the master's theses in English and present them at the end of the program period.

2. Enrolled JDS students in 2012

Name	Nationality	Laboratory	Supervisor
2010 Entrance			
BAYLATRY Malabou	Lao PDR	Environmental Life Economics	YABE Mitsuyasu, Professor
THANASACK Phetsamone	Lao PDR	Food and Agricultural Policy	ITO Shoichi, Professor
SENGMEUANG Sengpheth	Lao PDR	Food and Agricultural Policy	ITO Shoichi, Professor
NGUYEN Thi Thuy Hang	Viet Nam	Fisheries Biology	KAWAGUCHI Shigeo, Professor
DANG Thi Doan Trang	Viet Nam	Marine Environmental Science	OSHIMA Yuji, Professor
NGUYEN Thi Ngoc Dinh	Viet Nam	Agricultural Ecology	MOCHIZUKI Toshihiro, Assoc. Professor
NGUYEN Van Loc	Viet Nam	Agricultural Ecology	MOCHIZUKI Toshihiro, Assoc. Professor
HO Van Bac	Viet Nam	Agricultural and Farm Management	NANSEKI Teruaki, Professor
LONN Pichdara	Cambodia	Forest Management	MIZOUE Nobuya, Assoc. Professor
HENG Namyi	Cambodia	Forest Management	MIZOUE Nobuya, Assoc. Professor
SAM Sreymom	Cambodia	Irrigation and Water Utilization	SHINOGI Yoshiyuki, Professor
Moe Moe Hlaing	Myanmar	Plant breeding	YASUI Hideshi, Assoc. Professor
Phyu Phyu San	Myanmar	Insect Natural Enemies	TAKAGI Masami, Professor
Sein Mar	Myanmar	Tropical Crops and Environment (Institute of Tropical Agriculture)	OGATA Kazuo, Professor
2011 Entrance			
KHAMPHILAVANH BounEua	Lao PDR	Food and Agricultural Policy	ITO Shoichi, Professor
PHRANAKHONE Pangna	Lao PDR	Agricultural and Farm Management	NANSEKI Teruaki, Professor
SODOUANGDENH Somsanouk	Lao PDR	Forest Ecohydrology (University Forest)	OTSUKI Kyoichi, Professor
HOANG Dinh Chieu	Viet Nam	Aquatic Field Science	YOSHIKUNI Michiyasu, Professor
NGO Minh Hai	Viet Nam	Food Marketing	FUKUDA Susumu, Professor
NGUYEN Thi Quynh Chi	Viet Nam	Environmental Life Economics	YABE Mitsuyasu, Professor
NGUYEN Thi Thinh	Viet Nam	Food and Agricultural Policy	ITO Shoichi, Professor
NONG Thi Hue	Viet Nam	Crop Science	IWAYA-INOUE Mari, Professor
THIEU Thi Phong Thu	Viet Nam	Plant Nutrition	YAMAKAWA Takeo, Assoc. Professor
CHIM Kosal	Cambodia	Forest Management	MIZOUE Nobuya, Assoc. Professor
KOUN Pich	Cambodia	Environmental Life Economics	YABE Mitsuyasu, Professor
THUCH Phalla	Cambodia	Forest Management	MIZOUE Nobuya, Assoc. Professor
Kyi Moe	Myanmar	Plant Nutrition	YAMAKAWA Takeo, Assoc. Professor
Myo Zaw	Myanmar	Tropical Crops and Environment (Institute of Tropical Agriculture)	OGATA Kazuo, Professor
Tual Cin Khai	Myanmar	Forest Management	MIZOUE Nobuya, Assoc. Professor

3. Requirements for Qualification and the Description of the JDS program

The required qualifications for applicants are as follows:

- (1) **Academic requirement:** Bachelor's degree or equivalent must be or expected to be awarded by the time they are enrolled in the JDS program.
- (2) **Language skill:** Non-native English speakers must hold a sufficiently high score of official qualification test such as TOEFL, TOEIC, or the Cambridge Certificate.
- (3) **Health:** An applicant has to be certified to be both physically and mentally healthy by a qualified and recognized physician.

Program description and degree awarded

JDS program consists of lectures, seminars, and thesis writing. Students are required to obtain 30 hour credits with a minimum required grade of 60% during the two-year program period. Master of Science (MSc) will be awarded in the completion of a master thesis.

4. JDS scientific tours

In order to enhance the knowledge of agricultural technologies or policies in Japan, several field trips are being conducted. In 2012, students visited (1) a beautiful terrace paddy field with planting experiences of rice in May, (2) an organic rice farm using ducks in Iizuka city in July, (3) the Fukuoka fish market and Fukuoka Agricultural Research Center in August, and (4) fish farming in Karatsu also in August.



Rice planting



Fish farming center

5. JDS BBQ

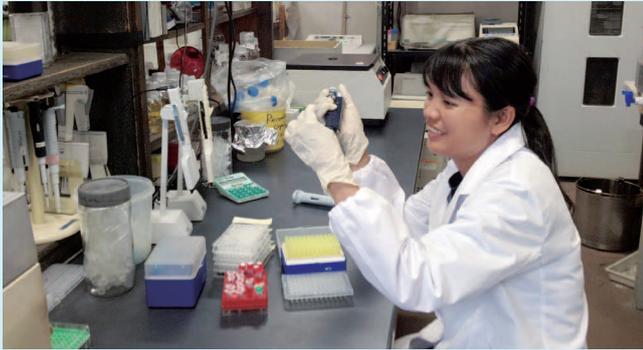
In the end of the program, JDS students and those supervisors had an opportunity of gathering with juicy BBQ on July 20th, celebrating the graduating students. The second year JDS students had just finished their final presentation of their master thesis on 19th of July, we celebrated their success and the graduating students expressed their great gratitude to their supervisors.



6. Reports from JDS Students

Moe Moe Hlaing

Mapping of a brown planthopper resistance gene, *BPH25B* derived from *Indica* rice cultivar ADR52



I am a second year master student of the JDS program 2010-2012 in the Plant Breeding laboratory. My two-year study in Kyushu University will finish and I have to say good-bye soon. The study life in Kyushu University gives me great opportunity to study my specific field with modern techniques and facilities. I would like to express my grateful thanks to Professor Atsushi Yoshimura and Associate Professor Hideshi Yasui for their guidance, invaluable suggestions and encouragements during my study. I am especially indebted to Japan International Cooperation Center (JICE), the Japanese Grant Aid for Human Resource Development Scholarship (JDS) program providing me financial support.

Here, I would like to briefly explain about my research, deals with the genetic study of brown planthopper (BPH) resistance in rice.

The brown planthopper (BPH, *Nilaparvata lugens* Stål) is one of the major insect pests that threaten many rice-growing areas in Asia. Development of resistant varieties is one of the effective and environment friendly approaches to control damage cause by BPH. Recently, molecular markers are useful tools for the mapping of agriculturally important traits. Until now, 26 major resistance genes in BPH have been reported in both cultivated and wild rice. In previous study, *BPH25* and *BPH26* were mapped on the short arm of chromosome 6 and on the long arm of chromosome 12, respectively (Myint *et al.* 2012). However, Yara A., found that two genes contributed in *BPH25* region according to the genotype and phenotypic data and tentatively named the genes as *BPH25A* and *BPH25B* (unpublished data). They also developed the near-isogenic lines (NILs) and pyramided lines (PYLs) carrying *BPH25A*, *BPH25B* and *BPH26* to determine the resistance mechanism of these three genes and for the mapping of *BPH25B*.

To study the resistance mechanism of the genes, the NILs carrying *BPH25A*, *BPH25B*, *BPH26* and the PYLs carrying *BPH25A/BPH25B*, *BPH25A/BPH26*, *BPH25B/BPH26*, and *BPH25A/BPH25B/BPH26* were evaluated using three insect strains collected in Japan from 1966 to 2010 (Hatano-66, Chikugo-89 and Kumamoto-10). The rate of surviving insects (RSI) and the rate of female with swollen abdomen (RFSA) were monitored 5 days after infestation. The plants with 0~30% of RSI and RFSA were categorized as resistant, those with 30~70% as moderately resistant and those with 70~100 % were categorized as susceptible.

Table 1 shows that host plant reactions of NILs and PYLs carrying *BPH25A*, *BPH25B* and *BPH26* against to three laboratory strains of BPH. *BPH25A* NIL is susceptible to all the tested BPH strains. The NIL carrying *BPH25B* is consistently resistant to all tested strains. The NIL carrying *BPH26* is resistant to both Hatano-66 and Chikugo-89 strains but susceptible to Kumamoto-10 BPH. *BPH25A* is not effective in its PYLs, with

only *BPH25B* contributing in the *BPH25A/BPH25B* PYL and *BPH26* in the PYL for *BPH25A/BPH26*. On the other hand, pyramiding of *BPH25B* and *BPH26* showed an increase in level of resistance to different strains of BPH. The level of resistance in PYL is nearly equivalent to NIL for *BPH26* against Hatano-66, is equivalent to NIL for *BPH25B* or *BPH26* against Chikugo-89 and that in PYL is also equivalent to NIL for *BPH25B* against to Kumamoto-10 strain. These results suggest that specific insects can adapt on the single specific resistance gene. Pyramiding of the two genes has broadened resistance to all the tested BPH strains.

The *BPH25B* is consistently resistance to the BPH strains that collected in Japan from 1966 to 2010. *BPH25B* was resistant to Kumamoto-10 strain while *BPH26* was susceptible to this strain (Table 1). Based on these results, we decided to map *BPH25B*

Table 1. Host plant reaction of NILs and PYLs carrying *BPH25A*, *BPH25B* and *BPH26* against three laboratory strains of BPH

Line/ Cultivar	Resistance Gene(s)	Rate of female with swollen abdomen (RFSA) (%) ^a			Reaction to BPH		
		Hatano-66	Chikugo-89	Kumamoto-10	Hatano-66	Chikugo-89	Kumamoto-10
TBPH1	<i>BPH25A</i>	97.5 ± 2.5 ^d	91.0 ± 5.6 ^b	85.0 ± 9.6 ^b	S	S	S
TBPH51	<i>BPH25B</i>	56.0 ± 8.8 ^c	4.0 ± 4.0 ^a	15.0 ± 9.6 ^a	MR	R	R
TBPH101	<i>BPH26</i>	40.0 ± 10.7 ^{ab}	0.0 ± 0.0 ^a	80.0 ± 11.5 ^b	R	S	S
TBPH151	<i>BPH25A/BPH25B</i>	22.0 ± 9.3 ^{bc}	0.0 ± 0.0 ^a	20.0 ± 8.2 ^a	MR	R	R
TBPH201	<i>BPH25A/BPH26</i>	20.0 ± 12.1 ^{ab}	0.0 ± 0.0 ^a	95.0 ± 5.0 ^b	R	R	S
TBPH251	<i>BPH25B/BPH26</i>	8.0 ± 6.1 ^{ab}	0.0 ± 0.0 ^a	11.3 ± 6.6 ^a	R	R	R
TBPH301	<i>BPH25A/BPH25B/BPH26</i>	0.0 ± 0.0 ^a	0.0 ± 0.0 ^a	0.0 ± 0.0 ^a	R	R	R
Tachung65	Note	92.0 ± 4.4 ^d	88.0 ± 8.0 ^b	100.0 ± 0.0 ^c	S	S	S
ADR52	<i>BPH25, BPH26</i>	0.0 ± 0.0 ^a	0.0 ± 0.0 ^a	20.0 ± 14.1 ^a	R	R	R

^a Means (mean ± S.E.) followed by the different letter are significant at the 5% level by the Tukey-Kramer multiple comparison test.
^b RFSA less than 30%; R, 30 to 70%; MR, greater than 70%; S

gene in the present of *BPH26*. We developed mapping population by crossing of two NILs carrying *BPH25B* and *BPH26*. The F₁ plants were self-pollinated to generate F₂ populations. In the F₂ population, the plants segregating at the *BPH25B* region and fixed for ADR52 at the *BPH26* were selected by marker assisted selection to develop the mapping population. BPHPYLF₃ 1, 2, 3 and 4 were used for the mapping of *BPH25B*.

BPH resistance was evaluated by rate of surviving insects (RSI) and rate of female with swollen abdomen (RFSA). The plants with less than 40% of RFSA were classified as resistant and those with greater than 60% were classified as susceptible. Eight simple sequence repeat (SSR) markers; *M1*, *M2*, *M3*, *M4*, *M5*, *M6*, *M7* and *M8* were used for the mapping of *BPH25B*. Kumamoto-10 BPH strain was used in mapping of *BPH25B* because it was avirulence to *BPH25B* while virulence to the NIL carrying *BPH26*.

Four BPHPYLF₂ plants, which are heterozygous for *BPH25B* and homozygous for ADR52 at the *BPH26* locus were selected to construct mapping populations. In the rate of female with swollen abdomen, BPHPYLF₃ 2 showed discrete bimodal distribution with 0~40% RFSA in 21 resistant individuals and 60~100% RFSA in 81 susceptible individuals. This segregation ratio fits to 1:3 (resistant : susceptible) ratio ($\chi^2 = 0.303$), indicating that a single recessive gene controlled BPH resistance in the population BPHPYLF₃ 2. The segregation ratios of other three populations were fixed to this ratio. The linkage analysis was conducted using 8 SSR markers using 262 individuals.

The linkage map indicates that *BPH25B* is located between the flanking markers *M2* and *M5* (Fig. 1). The gene also co-segregated with *M3* and *M4*. There was no recombination between these markers. The genetic distance between *M2* to *BPH25B* and *BPH25B* to *M5* is 0.191 and 0.191 cM, respectively.

The distance between the two flanking marker *M2* and *M5* on Nipponbare sequence is about 80 kb. This information is very useful for molecular cloning of *BPH25B*.

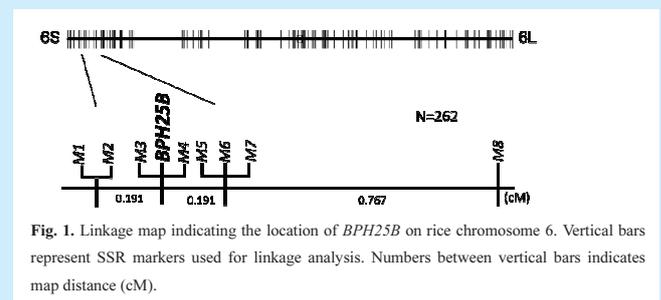


Fig. 1. Linkage map indicating the location of *BPH25B* on rice chromosome 6. Vertical bars represent SSR markers used for linkage analysis. Numbers between vertical bars indicates map distance (cM).

Phyu Phyu San

Life in Kyushu University

This day will not come again. Each minute is worth a priceless gem. Now I am second year student belong to insect natural enemies. After two month, I will be graduated for master degree and will have to go back my country, Myanmar. Actually, M2 student life is a hard time for me. Most of the times were passed by studying. But I want to share the events that were left in my mind remarkably. I gather some memories of life in Japan.



I went orange picking on 5th November, 2011 with my friends. We went there when it was raining. However, we could not care the rain and kept in mind to find the best orange and tasted it. After we had chosen the orange whatever you desired and ate together happily and also shared the information of good orange plant bearing good taste fruits. Among the orange plants, I picked and ate as much as I could during the limited time. Owner of the orange farm gave one bag of orange as a present. After orange picking, our group joined chrysanthemum flower festival. We had a chance to see chrysanthemum garden with various varieties, sizes and pretty colors. The arranged and displayed of the flowers showed that Japanese people are famous in flower arrangement. At this festival, they showed their ability by creating many different attractive and beautiful styles. So, I took not only a lot of photos but also wander around the place. There was pleasurable time in my life and Memorial Day for me.

Another event that I want to say and keep in my mind is about one of special lectures. I attended the special lecture from 26th and 27th on January, 2012 because of my interest. The subject is Frontiers in Life and Earth Sciences: Exploration of the Deep Subsea floor Biosphere through Scientific Ocean Drilling. The lecturer is distinguishing guest, Dr. Fumio Inagaki, Group Leader & Principal Senior Scientist, Japan Agency for Marine-Earth Science and Technology (JAMSTEC) invited by Kyushu University. He is a very smart and good in English. He also shared his wonderful knowledge to all students. His lecture was very new for me; however he could explain clearly and pursued the students to understand well. I really appreciated that sensei and thanked the organizers who planned the lecture. I satisfied that I had an opportunity to join this lecture. In addition, we got a special chance to join the strawberry picking by attending the special lecture. I love the strawberry very much. Fukuoka's strawberry is famous in Japan because of the very delicious taste. In Kyushu Island, each prefecture possesses their individual famous crops. In the strawberry farm, there were many varieties of strawberry. Owners of strawberry farm gave the small basket. We picked big and red strawberry by ourselves and then ate until full. We took a lot of photos in the strawberry farm with sensei and friends. I felt delighted in my mind as I had a chance to participate the fruit pickings.

I am assured that everyone can get gratification and brilliant knowledge. My student life as a JDS fellow is about to end soon. I am very proud of being a student of Kyushu University, Japan and really appreciative to all.

Nguyen Thi Thuy Hang

JUST COME AND ENJOY IT

The personal life is familiar with a laptop that could

install any software and languages depending on the user's necessities and hobbies. The schools are considered as shape of computers and the teachers are hard disk. These computers had been bought by Japanese Grant Aid for Human Resource Development Scholarship



(JDS) program to give JDS students from Bangladesh, Cambodia, Laos, Myanmar, Mongolia, Philippines, Vietnam, etc. Each student chose a variety of different brands such as Macbook, Dell, Fujitsu, Toshiba, etc. and Sony Vaio is my choice. Why did I choose Sony Vaio Z? This is simple because it is slight, 1.3 kg and made in Japan. Although it is an expensive one but I did not concern about the prices prior to giving a decision. Before arriving Japan, I owned a HP Pavilion dv5t from America - made in China. It has worked well and my brotacher now is using it. Its price is only one-thirds of my current computer but it was heavy for me (approx. 2.7 kg). Actually, I never concern about origin of computer or others. However, I have changed my way of thinking when I came to Japan. Most of my friends said that made in Japan is the best choice therefore it have made me believe in that. I do not want everybody think that I rejected the favor of Japanese spending to me after finishing this Master course. I just would say "JUST COME AND ENJOY IT". All acknowledge I wrote in my master thesis, if you wish to know, please meet my professor (Master thesis at Kyushu University - Japan will submit to professor). Hope all students enjoy their life at university!

Dang Thi Doan Trang

My life and my study in Japan



Dear Ladies and Gentlemen,

I am Dang Thi Doan Trang (ダンティドアンチャン), from Vietnam. This time is two years since the first day I came here.

Firstly, I would like to give my deep thank to my country government and Japanese government who give me a chance to study in Japan, to my supervisor, my lab mates, all my friends and my family. Two years time is not long time but it gives me such challenges and memories as well.

Secondly, I would like to share briefly about my challenges and sweet memories. I think the big challenge in the second year is about the difference in culture, especially in language. So my advise to people who want to study in Japan, please start to study Japanese as soon as possible. Although the different culture has been my challenge but it has also given me such sweet memories from joining culture events. Please send my thanks from bottom of my heart to Japanese people in Hippo family club who always try to introduce Japanese culture to my friends and me.

Thirdly, I would like to introduce my research in Master course. The title is "Pharmacokinetic study of Catechin (Epigallocatechin gallate, EGCG) after intra-peritoneal and oral administration to yellowtail (*Seriola quinqueradiata*)". Briefly:

The raphidophytes *Chattonella* spp., are harmful algal

bloom (HAB) species, which have frequently caused severe fisheries damage in coastal waters of western Japan. Since reactive oxygen species (ROS) are known to have potentially deleterious effects on biological systems due to damage to proteins, lipids, and nucleic acids; the ROS generated by *Chattonella* spp., may be one of the causative factors responsible for the toxic effects to living organisms, especially to yellowtail (*Seriola quinqueradiata*). (-)-Epigallocatechin gallate (EGCG), known as one of the most powerful green tea polyphenol antioxidants *in vitro* and *in vivo*, was thought to be an effective solution for protection of the damage by HABs of *Chattonella* spp. in fish. Therefore, our study aimed to obtain pharmacokinetics of EGCG by oral gavage and intra-peritoneal (IP) administration to yellowtail at a dose of 10 mg/kg of body weight.

Blood and tissue samples were collected at 0-h (control), 2-h, 4-h, 8-h, 24-h, 48-h and 72-h post-treatment. Sample extraction was followed the method of Fu et al. (2008), which was slightly modified. Concentration of EGCG in plasma, liver and muscle samples was obtained by HPLC assay with a detection limit, 0.066 µg/mL. Pharmacokinetic parameters of EGCG in fish plasma were obtained by fitting with 1-compartment IP administration model.

We found that EGCG was present in all plasma samples collected at 2-h post-dose (2.22 ± 1.46 µg/mL), then decreased quickly in groups of 4-h and 8-h administration (4.37 ± 3.98 µg/mL and 0.99 ± 0.66 µg/mL, respectively) and not detected in late-collected groups in IP administration (Fig. 1); whereas, there were only one plasma specimen detected EGCG (0.623 µg/mL, at 2-h post-treatment) in oral gavage and no detection of EGCG in all muscle and liver samples. In pharmacokinetic parameters, there were a high elimination rate constant (0.24) and a short half-life (2.89 h). It suggested that EGCG was poorly absorbed and/or quickly eliminated in yellowtail. Our results provide a basis for understanding about pharmacokinetics of EGCG in fish.

Thank you very much!
Sincerely yours,
Dang Thi Doan Trang.

LONN Pichdara

My Activities in Laboratory of Forest management at Kyushu University



First of all I would like to express my profound thanks and gratitude for Government of Japan and Government of Cambodia that provided me a special opportunity to pursue my master degree study at Kyushu University in Japan. It is a wonderful experience and good learning environment.

Kyushu University, of course, one of the prestigious universities in Japan, especially well known for Agricultural Science and other fields. I like facilities the university provided such as useful and comfortable laboratory and library, for instance, with lots of books, quiet and big space to concentrate on studying. I belong to laboratory of forest management with very nice 20 colleagues in 2012. My laboratory members are friendly and helpful, especially Professor Yoshida and Associate Professor Mizoue (my supervisor), Kajisa San, Ota San, Tani San, Shige San, Akane San, Inoue San, Nishida San etc., they are really kind and always taking care of both my study and daily life. I really

like a memorable afternoon tea/coffee break time, when we gather together to have tea or coffee with some sweet snacks. It is a very useful tradition for both relaxing from hard work and building closer relation among the team in the laboratory.

Besides conducting desk research, having laboratory presentation and discussions, my colleagues and I also have times to visit Japanese natural and artificial forests in national parks and research study sites at 3 Universities of Forest in Ashoro, Miyasaki, and Fukuoka. It was a stunning landscape of natural forests during the fall season when the tree leaves are so colorful. Sixty seven percent of Japan's land covered by forest, and 41% of them are artificial. Two famous conifers namely Sugi (*Cryptomeria japonica*) and Hinoki (*Chamaecyparis obtusa*) are mostly planted in Japan. Sometimes, they are planted mixed with natural forests making stripe shapes along mountains of Japan. I have learned a lot from the excursion activities and realize that forests do provide a lot of benefits from its products and invaluable services such as timbers, non timber forest products, fresh water, climate change mitigation, wildlife habitat, disaster prevention etc. These have encouraged me more and more to love forests and would like to see such views exist in my beloved country, Cambodia, as well once I come back. Furthermore, I also had chances to visit forest gardens and museums in some prefectures. It is incredible that even though it is located in town of Hokkaido Prefecture, for example, a forest garden displayed different tropical tree species and plants for all generations to experience and life long learn. The extraordinary museums have kept records of various sorts of fauna and flora for the sake of Japanese historical and natural heritages.

I have really had nice memorable times in my life during the 2-year study at Kyushu University in Fukuoka. After returning home, I will bring all the best and applicable experiences especially in the field of forestry and agriculture to contribute to the sustainable development of Cambodia in the near future. Finally I would like to express my great respects and thankfulness for my supervisor and professor, colleagues of laboratory of forest management, as well as JDS coordinators: Yoshino San and Hoashi San for sharing their practical knowledge, know how, concerns, smiles and cares during my stay and learning here at Kyushu University. I would like to wish all of you healthy, happy, and prosperous lives.

Heng Namyi

Benefits of Local Participation in Conservation in Central Cardamom Protected Forest, Southwest of Cambodia.

Introduction

Since the past two decades, community-based conservation with incentive-based programs (IBPs) has become a favored approach in protected area management in developing country. It is a way in which biodiversity conservation can be ensured by delivering benefits to address livelihood needs of the local community and encourage the sustainable practices. However it is said that due to some problems in their design, implementation and management, IBPs have not realized their full potential, and these problems have yet to be successfully addressed. This calls for more case studies to clarify positive and negative points of IBPs under a given biophysical and socioeconomic condition.

In Cambodia, there are 23 protected areas (PAs) and 13 protected forests (PFs), covering 26.98% of the total land. Central Cardamom Protected Forest (CCPF, established 2002, 401,313 ha), one of PFs in Cambodia, is an important constituent of the Indo-Burma Biodiversity Hotspot and one of the largest intact blocks of natural forest remaining in mainland Southeast Asia, containing globally threatened species such as tiger, Siamese crocodiles, Asian elephant, bear, pangolin, Asian dhole, dragon fish. CCPF

has initiated the conservation incentive agreement (CA) program with the communities in 2006 for helping conservation. However quantitative and qualitative information on the effectiveness of local participation in terms of local people's benefits is limited. Therefore, this study aimed at evaluating benefits of conservation incentive agreement program in terms of local livelihood improvement, local people's attitude and participation in conservation.

Research Methodology

Semi-structure questionnaire survey was undertaken in August, 2011 for 88 households by a systematic sampling selection from three of five communes (Ta Ley Leu, Tma Daun Pov and Chumnob) in and adjacent to protected forest in Tma Bang district, Koh Kong province. The 88 households are classified based on living condition into 3 groups; poor, medium, and better off. The main benefits from CA program are wage of forest and wildlife patrol, buffaloes and mechanical mills for agriculture power.

Results and Discussion

Results indicated that very positive perception of local people on conservation activity and incentives-based program was found; all of responses identified that conservation incentive program helps to improve livelihood and community development, and to protect natural resources in community. Most of people (87%), the 10%-50% of livelihood improvement was due to contribution from CA, whereas more than 50% contribution was from CA for 13% of responses (Figure 1); the poor group showed high percentage (74%) of the least (10-30%) contribution from CA, while the rich had more contribution from CA (Figure 2). Also, very high of local people (>80%) participated in conservation activity for forest, wildlife or its habitat protection (Figure 3). Anyway, the positive attitudes towards conservation were strongly related to the receipt of benefits in term of sustainability of local participation for biodiversity conservation. More than half of responses (65%) might reject to participate in conservation activities without any incentives for compensation (Table 1); a similar to other regions are found (Spiteri & Nepal, 2008; Badola, 1998; Infield, 1988; Infield & Namara, 2001; Walpole & Goodwin, 2001; Bajaracharya *et al.* 2005; Mehta & Meinen, 2001; Gadd, 2005). The results suggested that the development partners and conservation communities should work together by deciding which mechanism is the most appropriate for sustainability of participation for biodiversity conservation and for equality of livelihood improvement.

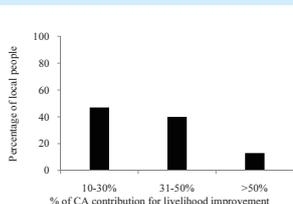


Fig. 1: Contribution of CA for livelihood improvement

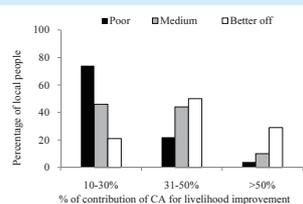


Fig. 2: Contribution of CA for livelihood improvement for each of wealth ranks

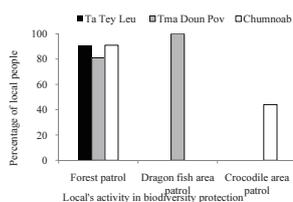


Fig. 3: Local people's participation in conservation activity

Table 1: Local's perception for participation in patrolling and other conservation activities without any incentives

Perception (%)	Commune		
	Tatey Leu (n= 34)	Tma Daun Pov (n= 31)	Chumnoab (n= 23)
Yes	24	32	30
No	73	65	70
No answer	3	3	0

Conclusions and Recommendations

The benefits from incentive-based conservation program play a tangible role in local socioeconomic development, mainly livelihood improvement, and participation attractions. The poor groups are less improvement of livelihood than rice groups from

contribution of conservation and development program.

The incentive-based conservation program is successful to build the positive attitude and participation of local people in conservation activity; but it might be short-term focus of sustaining conservation efforts because it was strongly related to benefits for sustainability of participation in biodiversity conservation. Some recommendations were raised to improve local livelihood for equality and sustainability of local's participation in conservation activity.

- The benefits sharing from conservation or incentive-based programs should focus on and provide more opportunities for poor groups.
- The establishment of an appropriate link between benefits and beneficiaries for supporting conservation for long-term sustainability must be generated; e.g. Ecotourism site should be generated for helping to improve local livelihood and participation in conservation for long-term sustainability even if no support from outside in the future.
- More direct payment schemes may be more effective; e.g. payment for conservation land and performance-based payment for biodiversity conservation (Ferraro & Kiss 2002).

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SAM Sreymom

Life in Kyushu University and Fukuoka

Two years have been passed very fast and the time for my leaving Japan is coming soon. Staying here has provided many things including education, self development, friendship, and travelling.

Studying at Kyushu University has supplied me a lot of knowledge and experiences plus higher academic degree. There



are many interesting courses of the international development research course program. Most of them are relevant and helpful to enhance my knowledge on

agricultural sector. More importantly, as I am belong to laboratory of irrigation water utilization; it has aroused interest of me to get into a new sphere of my academic life which is to get familiar with a more technical aspect of irrigation system as the focal point of my thesis is on social science. My respectful and supportive supervisor Professor Yoshiyuki Shinogi helps me a lot during my study in Japan specifically for my research with his always advices and supports.

I have been developed myself of being independent educationally and emotionally. For the research, I have to initiate by myself and under this independent atmosphere which gradually advance my capacity for it triggers self exploration and learning.

Likewise, I have made a lot of friends from many countries specifically Asian ones. Without their supports, I would have found hardship in pursuing my study here. I also have very helpful and friendly labmates whom are all Japanese. To me, they always try their best to assist me in both my studying and living. Additionally, we have many fun times together during studying and field trips.

More interestingly, I have many chances to travel to many places in Japan, acquiring the distinct cultures. My most interesting season for travelling is in Spring in which many varieties of flowers are being shown; and I have been to Huis Tein Bosch in Nagasaki and Noko Island in Fukuoka. Many sweet and cherish memories in Japan will stay in my deep heart forever.

Irrigation System in Kumamoto Prefecture

During the first year, I have been to some places in Southern Japan specifically in Kumamoto and Kagoshima to visit irrigation systems and water user associations (WUA) there with my supervisor. In terms of WUA, Japan has many successful cases in managing this kind of common pool resource. A visited association in Kumamoto 2nd largest WUA in Kumamoto namely Tamana area with the total command area of the irrigation is 39, 407, 809 m². Dam at upstream is water source for this irrigation scheme. Water level and discharged are control by an automatic machines from headwork and WUA's office 24/7. Still, the water distribution is uneven at the end tail. The total expenditure for O&M is 50% from government, 25% from prefectural government, and 25% from members. Price is charged depending on total land area. They can collect 99.9% of total members. There are meetings between representatives of small groups all over the scheme on emerging issues and for consultation. The hardware or stock management is very important for management and now there is concern about the collapse of the headwork as it was built 50 years ago. Water right discussion takes place once in 10 years nationally. What has been impressed me about this irrigation scheme is how water is distributed and its amount to each field with an informatics system. With the help from this, not many human labors are needed to manage the scheme. Instead, few technicians are in place to check the flow rate of discharged water, water level in each field and so on.

Lastly, I would like to express my deep and profound attitude to Japanese government for providing scholarship, JICE office and coordinators for their supports, and supervisor and lecturers for their advices. Without them, I would not be able to succeed my study and ease my living here in Japan.

Nguyen Thi Ngoc Dinh

Varietal differences in morphological and physiological characteristics of rice seedlings (*Oryza sativa* L.) under various water regimes

I am a second year master's student of JDS program (2010-2012) in the Laboratory of Agricultural Ecology under the supervision of Assoc. Prof. Toshihiro MOCHIZUKI. After two years, I have already completed my master's thesis in Kyushu University. Now, I would like to briefly summarize my research.

Introduction

Drought is one of the critical problems for agriculture caused by climatic change globally. Increasing water usage from domestic consumption resulting from high population, industrial and agricultural activities, and pollution exaggerates the problem. In Vietnam, recently, the rice production has been seriously affected by drought. Aerobic rice system is one of advanced technologies to reduce water loss and to increase the water productivity of rice plant. However, there has been only limited information in crop performance between aerobic and flooded conditions. The objectives of this study were to analyze varietal differences in plant growth and root morphological traits in the response to different water regimes.

Materials and methods

Six rice varieties were used: two Vietnamese rice varieties, Beodien (upland) and KD18 (paddy); two Japonica rice varieties, Koshihikari (paddy) and Sensho (upland); and two Indica paddy rice varieties, IR24 and Rayada. The experiment was conducted in Biotron with constant temperature at 25°C, 70% of humidity, 12h photoperiods and 250µM m⁻²s⁻¹ of light intensity at day time. Three pre-germinated seeds were sown in a 1/10000a plastic pot contained paddy soil with 12% of soil moisture content (SMC (w/w)). Five days after sowing, seedlings were thinned to one plant per pot and water treatments; flooding as a control, well-irrigated (24% SMC) and drought (12%SMC) were applied. To avoid water evaporation from soil surface, each pot was covered by expanded polystyrene board with a small hole to allow seedling to grow. Water was added every 2 days to set the target SMC. Four weeks after sowing, seedlings were sampled. Root length (RL), root surface area (RSA), root volume (RV), and root average diameter (RD) were measured by using WinRHIZO (Regent Instrument Inc.). Leaf area (LA), shoot dry weight (SDW), root dry weight (RDW) and total dry weight (TDW) were determined at the end of the experiment. Water uptake (WU) during the treatments and water use efficiency (WUE, total dry weight/ WU) were calculated.

Results and discussion

SDW, RDW, TDW, LA, WU and WUE of Rayada, Sensho, KD18 and IR24 were not significantly different between control and well-irrigated conditions. Those of Koshihikari and Beodien in well-irrigated were lower than those in control (Fig. 1).

In the aerobic conditions (24% and 12% SMC conditions), RL, RSA tended to increase in almost varieties except Koshihikari. RL, RSA and RV of Koshihikari in the aerobic conditions were lower than those in control (Table 1). Among varieties used, Rayada had the highest value in RL, RSA, RV, SDW, TDW, LA and WUE, followed by Sensho. Moreover, Rayada had also the highest value in WUE in drought conditions, followed by Sensho. Although KD18 and IR24 had lower values in LA, SDW, RDW, TDW, and WU, these characters were not severely affected by drought compared with other varieties (Fig. 1). The results suggested that Rayada and Sensho are suitable with aerobic rice system and Koshihikari is not adaptable. Indica lowland rice varieties, KD18 and IR24 may be desirable drought tolerant varieties compared with Japonica lowland rice variety, Koshihikari.

Table 1 Varietal differences in root length (RL), root surface area (RSA), root volume (RV) and root diameter (RD) of rice plants under three water regimes.

Variety	Treatment	RL (cm)	RSA (cm ²)	RV (cm ³)	RD (mm)
Rayada	Control	162.16 ^a	162.79 ^a	1.31 ^a	0.32 ^a
	24%SMC	2096.31 ^b	212.20 ^a	1.71 ^a	0.32 ^a
	12%SMC	2379.76 ^b	223.33 ^a	1.67 ^a	0.29 ^a
Sensho	Control	1348.55 ^a	150.01 ^a	1.34 ^a	0.35 ^a
	24%SMC	1757.72 ^a	194.40 ^a	1.72 ^a	0.35 ^a
	12%SMC	1590.16 ^a	164.57 ^a	1.36 ^a	0.33 ^a
KD18	Control	910.92 ^a	87.22 ^a	0.67 ^b	0.30 ^a
	24%SMC	1015.84 ^a	93.22 ^a	0.68 ^b	0.29 ^a
	12%SMC	1709.55 ^b	158.29 ^a	1.17 ^a	0.29 ^a
IR24	Control	1185.29 ^a	113.92 ^a	0.87 ^b	0.30 ^a
	24%SMC	1452.79 ^a	139.19 ^a	1.06 ^a	0.31 ^a
	12%SMC	1808.74 ^b	170.33 ^a	1.28 ^a	0.29 ^a
Beodien	Control	1227.97 ^a	153.18 ^a	1.53 ^a	0.39 ^a
	24%SMC	1389.67 ^a	131.64 ^a	0.99 ^b	0.30 ^a
	12%SMC	1753.87 ^b	167.54 ^a	1.27 ^a	0.30 ^a
Koshihikari	Control	1284.09 ^a	136.98 ^a	1.17 ^a	0.34 ^a
	24%SMC	1042.37 ^a	88.59 ^b	0.60 ^b	0.27 ^a
	12%SMC	1008.15 ^a	97.52 ^b	0.75 ^a	0.31 ^a

SMC means soil moisture content (w/w). Mean within a column followed by the same letter in each variety are not significantly different at P<0.05 by Tukey's Test (n=6).

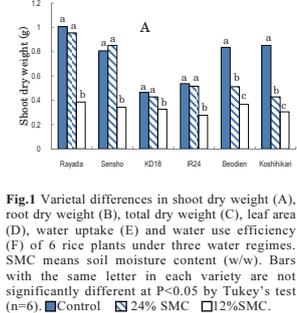


Fig.1 Varietal differences in shoot dry weight (A), root dry weight (B), total dry weight (C), leaf area (D), water uptake (E) and water use efficiency (F) of 6 rice plants under three water regimes. SMC means soil moisture content (w/w). Bars with the same letter in each variety are not significantly different at P<0.05 by Tukey's test (n=6). ■ Control ■ 24% SMC ■ 12% SMC.

water use of rice seedlings in relation to nitrogen form and water stress”:

I. Introduction:

Drought stress is one of the main causes that limits rice production and becomes an increasingly severe problem in many regions in the world. At least 23 million ha of rice production (20% of the total rice area) in Asia are subjected to drought at different intensities. In Vietnam, drought affects around 22% of rice area and usually happens during the seedling stage of rice. Recently, many studies have focused on the relationship between nutritional status and drought resistance. Guo et al. demonstrated that under water stress conditions, the growth of rice seedlings supplied with NH_4^+ were higher than with NO_3^- . This integrated effect on rice growth was highly dependent on water and nutrient uptake. In the present study, we investigated whether the combined effects of nitrogen form and water stress were detected in rice seedlings of different rice genotypes.

II. Materials and methods

Four rice cultivars; Koshihikari (*japonica*, paddy rice), Rayada (*indica*, deep-water rice), KD18 (*indica*, Vietnamese paddy rice) and Sensho (*japonica*, upland rice) were used. The experiment was conducted in a growth chamber at 25/25°C day/night. In the 14h photoperiod, plants received a photon density at around $200 \mu\text{molm}^{-2}\text{s}^{-1}$. Rice plants were grown in a hydroponic culture in 100ml flasks containing Kimura B nutrient solution. The pH of the nutrient solution was maintained every day at 5.0. The nutrient solutions were changed in every 3 days. After germination, rice seedlings were supplied with mixture of NO_3^- and NH_4^+ containing nutrient solution. Two weeks afterwards, water stress was simulated by adding 20% (w/v) polyethylene glycol (PEG, MW6000). Four treatments were examined: NH_4^+ (A), NO_3^- (N), NH_4^+ +PEG (AP) and NO_3^- +PEG (NP). All treatments had 8 replicates, with a random complete block design. After two weeks-treatment, plants were harvested. Dry matter was determined after drying samples at 80°C in three days to constant weight. For determination of N content, first, shoot was ground to a fine powder and then digested using with $\text{H}_2\text{SO}_4\text{H}_2\text{O}_2$ at 280°C. The digested samples were used for determination of nitrogen content in a spectrophotometer following Kjeildahl method. Total N accumulation was determined by multiplying between shoot dry weight and N content. Water uptake of rice seedlings was monitored by weighing. Root morphological characteristics were analyzed by using WinRhizo (Regent Instrument Inc.). Variance analysis and honest significant difference test were done using Unistat 5.6 software.

III. Results and discussion

Compared to non-water stress, water stress decreased shoot dry weight (SDW), root dry weight (RDW), N accumulation and water uptake (WU) of paddy rice, KD18 and Koshihikari. Water stress also reduced SDW, N accumulation and WU of upland rice, Sensho, but did not affect RDW. Rayada was able to maintain SDW, RDW and N accumulation under water stress. KD18 was seriously affected by water stress in NH_4^+ (Fig.1). For root indicators: root length (RL), root surface area (RA) and root volume (RV) had an increasing tendency under water stress, except KD18 and Rayada in NH_4^+ (Table 1).

Under water stress, KD18 had the higher values in SDW, RDW, N accumulation, RL, RA and RV in NO_3^- compared with NH_4^+ (Fig.1, Table 1). The change in nitrogen form supply did not affect SDW and WU of Koshihikari, Sensho and Rayada (Fig.1A, Fig.1D). However, NO_3^- increased RDW and decreased N accumulation of Koshihikari and Sensho as compared with NH_4^+ (Fig.1B, Fig.1C). Root characteristics such as RL, RA and RV of all rice varieties were higher in NO_3^- nutrition than those in NH_4^+ nutrition (Table 1).

Nguyen Van Loc

First of all, I would to express my sincerest gratitude:



Foremost, I would like to express my sincere gratitude to my supervisor Associate Professor Toshiihiro MOCHIZUKI for the continuous support of my master course study and research, for his patience, motivation, enthusiasm, and immense knowledge. His guidance helped me in all the time of research and writing

of this thesis. I could not have imagined having a better advisor and mentor for my master study. Besides my advisor, I would like to thank all staffs in my laboratory, for their encouragement, insightful comments. I would like to express my sincere thanks to Japanese Government and Japanese Grant Aid for Human Resources Development Scholarship (JDS) program and JICE staffs, to Vietnamese Government, to Hanoi University of Agriculture, to Kyushu University giving me great opportunities to become a master student at Kyushu University. I thank my lab-mates in student group for the stimulating discussions, for working together, and for all the fun we have had in the last two years. Last but not the least; I would like to thank my family for giving birth to me at the first place and supporting me spiritually throughout my life.

Next, I would like to express main results of my study in brief, entitled “Genotypic differences on growth, nitrogen uptake and

In conclusion, the results suggested that NH_4^+ did not enhance the growth of rice seedlings as compared with NO_3^- under water stress conditions. This finding is completely contradicted with previous researches. Furthermore, the results indicate that NH_4^+ are not suitable for KD18 under water stress conditions. Rayada represented an adaptation to both water stress and nitrogen forms.

as RL, RA and RV of all rice varieties were higher in NO_3^- nutrition than those in NH_4^+ nutrition (Table 1). In conclusion, the results suggested that NH_4^+ did not enhance the growth of rice seedlings as compared with NO_3^- under water stress conditions. This finding is completely contradicted with previous researches. Furthermore, the results indicate that NH_4^+ are not suitable for KD18 under water stress conditions. Rayada represented an adaptation to both water stress and nitrogen forms.

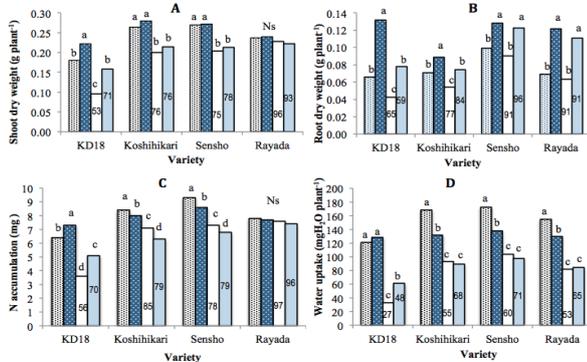


Figure 1 The effects of nitrogen form and water status on shoot dry weight (A), root dry weight (B), N accumulation (C) and water uptake (D) in rice genotypes (KD18, Koshihikari, Senryo and Rayada). Plants were supplied with ammonium (A) and nitrate (N) under either non-water stress or water stress simulated by adding PEG6000 20% (A+PEG as AP; N+PEG as NP). The numbers on the bars indicate the value of AP/A (%) or NP/N (%) and different lowercase letters above within each variety indicate significant differences between treatments at $P < 0.05$ by Tukey's Test ($n=8$). \square A \blacksquare N \square AP \blacksquare NP.

Table 1 The effects of nitrogen form and water status on root length (cm), root area (cm^2), root volume (cm^3), and root diameter (mm) of rice genotypes (KD18, Koshihikari, Senryo and Rayada).

	Root length (cm)				Root area (cm^2)			
	KD18	Koshihikari	Senryo	Rayada	KD18	Koshihikari	Senryo	Rayada
A	576.9c	618.4c	463.9d	528.9b	53.1c	53.2c	52.9d	47.1c
N	981.1b	841.8b	1128.5b	1098.4a	81.1b	62.7b	85.1b	84.6a
AP	365.9d	795.9b	763.4c	450.7b	29.6d	53.5c	66.5c	38.3d
NP	1378.0a	1496.0a	1458.0a	1045.9a	84.5a	84.5a	116.6a	74.5b
AP/A(%)	63	129	165	85	56	101	126	81
NP/N(%)	139	178	129	95	104	135	137	88
	Root volume (cm^3)				Root diameter (mm)			
	KD18	Koshihikari	Senryo	Rayada	KD18	Koshihikari	Senryo	Rayada
A	0.39b	0.37a	0.49c	0.34b	0.30a	0.27a	0.35a	0.29a
N	0.54a	0.38a	0.51b	0.52a	0.26b	0.24b	0.24c	0.25b
AP	0.19c	0.29b	0.46c	0.27c	0.26b	0.22b	0.28b	0.27a
NP	0.42b	0.37a	0.60a	0.43b	0.20c	0.18c	0.21d	0.23b
AP/A(%)	49	78	94	79	88	79	79	97
NP/N(%)	78	97	118	83	77	75	88	93

Plants were supplied with ammonium (as A) and nitrate (as N) under either non-water stress or water stress simulated by adding PEG6000 20% (A+PEG as AP; N+PEG as NP). Different lowercase letters indicate significant differences between treatments at $P < 0.05$ by Tukey's Test ($n=8$).

Sein Mar

“Technical efficiency analysis of mango production in Central Myanmar”

Special thanks to all of people



Dr. Kasuo Ogata and Prof. Dr. Mitsuyasu Yabe for their kind supervisions, guidance and encouragements during my study life. Secondly, I would like to extend my special indebtedness to Japanese Government and JICE office for giving me a chance to study here and supporting finance us. And all the friends, seniors and staffs in Institute of Tropical Agriculture and from the laboratory of Environmental Economics are also worthy to

Now is a last chance to express my sincere thank on the pages of this report but in my heart I will always thanks to all who had supported me. Firstly I would like to express my great gratitude to my respectable professors, Prof.

mention here to show my gratefulness for their help and kindness with me. I also would like to deeply appreciate the support of my host family and her friends from Hippo Club for their cordially friendship and sharing their enjoyable time with me. I had a lot of unforgettable memories together with them. Finally, but not the least, my sincere thank goes to our JICE coordinators: Ms. Yoshino and Ms. Hoashi for their ever readiness to help the students and for their patience and care like a family member.

Now I would like to introduce my research result briefly titled “Technical efficiency analysis of mango production in Central Myanmar”.

I. Introduction

In Myanmar, mango growing area increases dramatically in recent years and it occupies about 12% of total fruit sown area. Moreover, mango is the major fruit for domestic consumption and also the most important export potential crop among all other kinds of fruits. The export value of mango contributed about 0.68% of total crop products export value as of year 2008-09. Although mango is a very promising crop not only for farmer income but also for national economy, there is no obvious study concerned with productive efficiency and profitability of mango production in Myanmar.

II. Objective

The main objectives of this study are: 1) to estimate the technical efficiency of mango farmers and 2) to provide evidences on factors influencing the technical efficiency of mango farmers.

III. Data collection and Analytical Framework

The primary survey data were collected from 151 mango farmers in Mandalay and Sagaing Regions. To estimate the level of technical efficiency of mango farmers, Cobb-Douglas stochastic frontier production function was used and two-limit Tobit regression model was applied to determine the factors contributed in the source of technical efficiency.

IV. Results and Discussion

The result of the production function analysis was showed in Table (1). In the result, the high elasticity of labor coefficients with positively and highly significance depicted that labor appeared to be an important input in mango production. Pesticide utilization had a positive and significant effect on the output level of the mango production. However, the coefficients of fertilizer and machinery variables showed the negative effects on the mango output significantly. In Figure(1), the frequency distributions of TE are described. The technical efficiency level ranged from 27 to 86 percent with a mean level of 71 percent. The result of Tobit model was described in Table (2). From this result, the major contributing factors in technical efficiency were the age and experience of the farmers and mainly cultivated variety as Sein Ta Lone. Among these factors, farmer experience has a positive relationship with the technical efficiency while the age of farmers and the mango variety have negative effects on the efficiency level.

V. Conclusions and Recommendations

The study shows that the farming activities of mango production are heavily labor intensive. The result also reveals that pesticide application plays an important role in the mango production. In addition, pest and disease problems seem to be serious in the study area. This study also proves that the farmers are over utilizing of fertilizers and inefficiently applying machinery. The technical efficiency analysis indicates that the farmer with more experience can achieve the higher level of efficiency than others. The result of the coefficients of main variety namely Sein Ta Lone confirms that cultivation of a single variety, Sein Ta Lone does not promise to receive higher return from mango production. It can be suggested that the farmers should also

grow some other promising varieties like Shwe Hin Thar and Yin Gwe in their orchards.

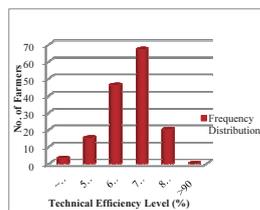
The study points out that there is a room to increase in farmers' efficiency with the present input level through the use of better farming practices. For the policy implications, government should concentrate on encouraging regular extension services for technical assistance. Farmers should be recommended not to grow only Sein Ta Lone variety but also to grow other potential varieties like Shwe Hin Thar and Yin Gwe. Effective pruning and training techniques, fertilizer application methods and orchard management trainings should be conveyed to mango farmers especially for older farmers via informal education program.

Table 1. Maximum Likelihood Estimates of the production frontier function

Variables	MLE	
	Coefficients	t-ratio
Constant	-1.93***	-5.2
Human labor	0.80***	9.73
Animal labor	-0.03	-0.67
Fertilizer	-0.04*	-1.78
Pesticide	0.11*	1.71
Machinery	-0.19**	-2.48
# of bearing tree	0.26***	3.86
Function coefficients	0.91	
F-statistics model	54.89***	
F-statistics (CRTS) ¹	0.004	
σ^2	0.47	
$\lambda = \sigma_u / \sigma_v$	0.98	
$\gamma = \lambda^2 / (1 + \lambda^2)$	0.49	
R ²	0.70	

¹CRTS=Constant Return to Scale

Figure 1. Frequency distribution of TE of mango farmers



Malabou BAYLATRY

ECONOMIC IMPACTS OF ECO-TOURISM ON LOCAL COMMUNITY: A CASE STUDY OF XE PIAN NATIONAL PROTECTED AREA

I. Introduction



Tourism plays an important role on socio-economic development of Laos. In 2010, a total of 2.5 million tourists visited Laos, which generated total revenue estimated at US\$ 400 million and employed around 32,000 people. The nature and culture-based tourism contributed US\$ 54 million out of US\$ 118 million revenue from tourism in 2003. Recently, the government of Lao is promoting the use of National Protected Areas (NPA) for ecotourism. About 7 out of the 23 NPAs are now being promoted as ecotourism destinations. Ecotourism activities related to elephant rides, trekking, home stay, cooking, camping bird watching and canoeing are some of the activities being promoted in the protected areas. Considering this development, it is important to assess the impacts of ecotourism activities to formulate appropriate policy for sustainable tourism development. However, studies on the impacts of ecotourism in Laos are limited, especially in Xe Pain NPA. Therefore, this thesis aims to assess the economic impacts of ecotourism on local community within a protected area.

II. Data and Method

The survey was conducted in four villages of Xe Pian NPA in Phathoumphone District, Champasak Province, Laos. The data collection employed face to face interviews with 121 local residents and questionnaire drop-off survey among 91 tourists. The

Ordinary Least Square (OLS) regression was used to determine the factors influencing the income from eco-tourism among local residents.

III. Results and Discussion

The number of domestic and international tourist arrivals in Xe Pian NPA was estimated at 15,565 tourists between 2004 and 2010. The tourism market segment was depended on foreign tourists who shared more than 90% of total visitors in each year. In 2010, the total revenue from entrance fees in the protected area was around 65 million Kip. Over the past five years, ecotourism brought a significant income to the local economy at approximately 1.1 billion Kip.

Table 1: Income derived from ecotourism activities from 2006-2010 in four villages of the study site

Categories	Number of Households involved in tourism	Income (LAK)	Percent
Community Lodge	43	930,000	0.08
Massage	10	1,362,039	0.12
Canoeing	10	3,057,530	0.27
Home Stay	22	20,743,438	1.8
Trekking & Camping	37	38,624,034	3.35
Handicrafts	NA	143,780,000	12.47
Elephant rides	33	944,460,224	81.92
Total	155	1,152,957,265	100

Source: Data compiled by author, 2011
Based on Eshoo (2009) and recorded by four villages in 2010
NA=Not Available

The Ordinary Least Square regression identified four variables which have significant association with income (Table 2). Elephant ride was positively associated with income. This appears that elephant rides create positive benefits to local people and make this tourism destination more popular. Age was negatively associated with income, suggesting that older people earn income less than younger people from ecotourism activities. Training was negatively associated with income, which may suggest that the current training program is not effective to needs of the local people. Some local people have stated that they were unable to apply the knowledge they learned from the training activities. The experience variable was positively associated with income, suggesting that respondents with many years of involvement in tourism activities gain more income from tourism.

Table 2: Determinants of income from ecotourism activities

Income	Coefficient	Standard Error	P-Value
Distance	12.45	21.70	0.567
Elephant ride	8328.26***	859.89	0.000
Trekking	131.66	724.92	0.856
Food Sale	34.65	744.10	0.963
Gen	114.03	561.22	0.839
Age	-32.77**	19.17	0.090
Household	54.78	136.90	0.690
Education	-2.80	68.75	0.968
Paddy Area	-62.41	276.39	0.822
Training	-2364.91***	796.86	0.004
Experiences	862.12***	257.03	0.001
Satisfaction	584.98	764.91	0.446
Constant	-1800.85	1947.67	0.357

Source: Survey data, 2011
Note: R-squared = 0.7181, Adjust R-squared = 0.6878
***, **, * indicate a statistically significant at 1%, 5%, and 10% level respectively.
Home Stay was omitted due to collinearity

IV. Conclusion and recommendation

The results showed that eco-tourism activities provided direct revenues to local residents estimated at 1 billion kip over the past five years. The protected area generated total revenue of 65 million kip from the entrance fees of 3,341 tourists that visited the place in 2010. French visitors accounted for 31.87% of the tourists, and they played an important role on tourism market segment. The tourists stayed on the average of 2 days in the protected area. About 81% of the tourists perceived that the entrance fee of the protected area is cheap.

The estimates from OLS identified elephant ride, age, training and experience of the local people are factors affecting the income from eco-tourism. The study recommended that conserving and increasing the number of elephant, in-depth assessment on the effectiveness of training programs being provided to the local residents and providing venue for exchange of experience among local residents are key policy issues that needed to be addressed in

order to sustain the income from ecotourism in the area.

Phetsamone THANASACK

The Role of Agricultural Extension Services on Rice Production Efficiency in Laos - A case study on Bolikhanh District, Bolikhamxai Province -

I. Introduction



Lao economy is primarily based on agriculture. It accounts for 30 percent of the GDP and employs 80 percent of total population. Rice is the most important staple food crop with its consumption of 201.6 kg per capita (2010). The total rice production (milled rice basis) in Laos is 1.39 million tons with harvested areas of 870,000 ha in 2010, indicating very low yield (1.60 t/ha) compared to other Asian countries like Vietnam (3.50 t/ha) and China (4.60 t/ha). Possible explanations for this are lack of agricultural skills among farmers and ineffectiveness of agricultural extension services in providing technical services (National Agriculture and Forestry Extension services 2010). The objectives of this study are to quantitatively evaluate how much the technical efficiency of rice production improves if farmers have an access to extension services and to identify other factors affecting their efficiency.

II. Data and Method

The following stochastic frontier production function is estimated for the above purposes with 112 samples collected from six villages in Bolikhanh district, Bolikhamxai province, Laos in September 2011.

$$\ln Y_i = \beta_0 + \beta_1 \ln X_{i1} + \beta_2 \ln X_{i2} + \beta_3 \ln X_{i3} + \beta_4 \ln X_{i4} + \beta_5 \ln X_{i5} + (V_i - U_i), \text{ and}$$

$$U_i = \delta_0 + \delta_1 Z_{i1} + \delta_2 Z_{i2} + \delta_3 Z_{i3} + \delta_4 Z_{i4} + \delta_5 Z_{i5}$$

where, Y_i is rice production (ton). X_1 is labour in man-days. X_2 is seed in Kg. X_3 is chemicals in LAK (Lao currency Kip). X_4 is machinery in LAK. X_5 is cultivated areas in ha. V_i is two-sided error term (outside the farmer's control, measurement errors and other statistical $(0, \sigma^2)$ noise). U_i is one-sided error term or technical inefficiency effects, if $U_i > 0$, that means the farm is technical inefficiency. Z_1 is agricultural extension services, if one farmers have an access to agricultural extension services and zero otherwise; Z_2 is experience in rice farming (ye-ars); Z_3 is education level of farmers, one if farmers completed elementary school or higher and zero otherwise; Z_4 is irrigation availability, one if farmers use irrigation and zero otherwise; Z_5 is improved rice seed variety, one if farmers use hybrid seeds and zero otherwise.

Data on rain fed-rice production during the cropping season (May-November) in 2010 are collected by using questionnaires. Face to face interviews with heads of villages and agricultural extension staffs are undertaken to complement the questionnaire survey.

III. Result and discussion

Among 112 farmers, 83 farmers have an access to technical extension services. Face to face interviews show that farmers who have an access to extension services think they receive enough technical assistance from them. However, our results also point out that problems such as pest and diseases, flood and low-yield

of traditional rice varieties commonly affect rice production in the region. In other words, there are still rooms for improvement for technical extension services.

The maximum likelihood estimates for parameters of the stochastic frontier production function are presented in Table 1. The results show that all input variables were positive; labor, seed and hired machinery services are significant at 5 percent. With regard to the technical efficiency, the results show that the coefficients on agricultural extension services, education level of farmers and improved rice seed variety are negative and statistically significant, indicating that they have a positive relation to the technical efficiency. We then compute the technical efficiency for each farmer. It varies between 26 and 99 percent with its average of 53 percent. Even though agricultural extension services significantly improve rice production efficiency, their impacts on the technical efficiency are not so strong.

Table 1 Parameter Estimates for Stochastic Frontier Production Function

Variables	Parameters	Coefficients	Standard Errors
Production function			
Constant	β_0	-2.18**	1.04
Labour	β_1	0.18**	0.07
Seed	β_2	0.48**	0.22
Chemicals	β_3	0.00	0.00
Hired machinery services	β_4	0.07**	0.04
Farm size	β_5	0.32	0.21
Technical inefficiency			
Constant	δ_0	0.65***	0.19
Agricultural extension services	δ_1	-0.26***	0.04
Experience in rice farming	δ_2	0.09***	0.02
Education level of farmers	δ_3	-0.04***	0.07
Availability to irrigation	δ_4	0.02	0.06
Improved rice seed variety	δ_5	-0.10***	0.02
Variance parameters			
Sigma-squared $\sigma_v^2 = \sigma_v^2 + \sigma_u^2$	δ^2	0.04***	0.01
Gamma $\gamma = \sigma_u^2 / \sigma_v^2$	γ	0.99***	0.61
LR test of the one side error		37.49	
$\chi^2(7,0.99)$ (Mixed Chi-square distribution)		25.87	

Source: Author's calculation.

Note: ***, ** and * show statistical significance at 1%, 5% and 10% level respectively.

IV. Conclusion and recommendation

This study computes the technical efficiency index for rice farmers in Bolikhanh District, Bolikhamxai Province, Laos. The mean technical efficiency among farmers was 53 percent (ranging from 26 to 99 percent), indicating that 47 percent of technical inefficiency needs to be reduced in order to increase rice production. Access to agricultural extension services, education level and improved rice seed variety are factors influencing the technical efficiency.

Based on results, some policy implications are in order. First, the quality of agricultural extension services should be improved. Especially, the services should focus on teaching how the risk of outbreaks of pest and diseases is reduced effectively. Also, the merits of adopting improved rice seed varieties should be emphasized. Second, they must increase the number of farm visits. Farmers who have an access can improve their technical efficiency. In our study, 26 percent of surveyed farmers still do not have an access to extension services. Providing extension services for such farmers is the first step to improve yield of rice production in the country.

Sengpheth SENGMEUANG

Annual Report of JDS Program in Department of Bioresource and Bioenvironmental Sciences

Unbelievable!!! A two academic life in Japan as well as in Kyushu University is soon coming to an end as I will graduate in September of this year. I am so glad that I am going back to my home country for which I will leave from Fukuoka prefecture in few months. Writing this report is a good opportunity for



me to express some feelings for JDS program before my graduation from master course. First of all, I wish to express my gratitude to everyone who has concerned throughout my research. My studies here would not have been successfully completed if it had not been for the valuable contributions, helps and collaborations of the following people. Firstly,

I would like to say my deepest gratitude to my supervisor, Professor Dr. Shoichi Ito for providing me the invaluable suggestions and his guidance throughout the study; and I am also grateful to Professor Dr. Hiroshi Isoda and assistant professor Dr. Hisamitsu Saito. Moreover, I am extremely thankful for their time, advices, encouragement, supports and other efforts which made the completion of my thesis or my research. Secondly, I also would like to sincerely thank to Japan International Cooperation Agency (JICA), the Japanese government, Ministry of Industry and Commerce of Lao PDR, and Ministry of Education of Lao PDR for providing me with the best opportunity to continue my study in Japan through the Japanese Grant in Aid for Human Resource Development Scholarship (JDS). If it had not been for this invaluable chance, I would never have realized my dream of accessing to this great study program at the internationally recognized Kyushu University. And, thank you to the Japan International Cooperation Center (JICE) for their support, advice, and help during my two years stay in Japan. One more thing, I also acknowledge my regards to all of the JICE staff for their kind assistance in assuring my comfort in study life period in their wonderful land of Japan. Finally, I am deeply grateful to my colleagues, both from and in my motherland and my international friends, especially students, my dear friends, my seniors and staff in my laboratory.

Regarding my research, it is entitled “*Study on Food Supply Chain-in case study of Pork Value Chain in Vientiane Capital, Laos,*” in what follows, I would like to briefly give the overall view of what I have studied.

I. Introduction

Agriculture is a main source of income in Laos; about 80 percent of the population engages in it. To ensure food security and to achieve poverty reduction in rural areas, strengthening agricultural production has long been the highest priority for Lao government. With regard to livestock production, the number of commercial pig raising farms has been gradually increased in many provinces such as Vientiane Capital and Khammouane, facing rising pork demand in the country.

Pork price has increased dramatically during this period. According to Ministry of Agriculture and Forestry (2008), market power of middlemen and retailers in distribution channels is the main cause of high pork prices. However, no study has examined the cost structure of the pork supply chain so far. This paper aims to investigate the cost structure of the pork supply chain in Vientiane Capital as a case study to reveal the main cause of high pork prices in the region.

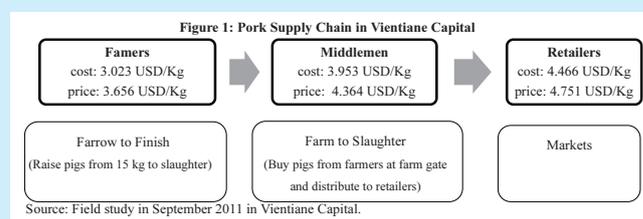
For this purpose the primary data are collected by face to face interviews with each player in the supply chain in Vientiane Capital in September 2011: 30 farmers of different sizes, 5 traders/middlemen and 10 retailers. Discussions with government officials are also conducted to obtain secondary data such as reports, regulations and laws on pork production and distribution.

II. Results

Figure 1 shows our primary results. Farmers sell pigs at 3.656 USD/kg to middlemen. Their costs of production are 3.023

USD/kg; most of them are explained by feed (57%) and piglet (38%) costs, implying that an increase in feed prices is a factor of high pork prices in recent years (Figure 1). There are large variations in feed costs between small- and large-scale famers because the former only use expensive complete feeds while the latter effectively mixes complete and traditional feeds. This leads to significant variations in production costs between them: 3.100 USD/kg for the former but 2.841 USD/kg for the latter. In addition, middlemen offer different prices to different scales of farmers – 3.536 USD/kg for the former but 3.738 USD/kg for the latter – based on the frequency of visits to farmers to buy pigs. That is, the number of pigs in a large-scale farmer can meet the demand of a middleman but that in a small-scale farmer cannot and thus, a middleman needs to visit many small farmers. As a result, profits range from 0.436 USD/kg for small-scale farmers to 0.897 USD/kg to large-scale farmers with 0.633 US/kg as an average.

Middlemen sell pork at 4.364 USD/kg to retailers. Their costs and profits are respectively 3.953 USD/kg and 0.410 USD/kg on average. Finally, retailers sell pork at 4.751 USD/kg and receive 0.285 USD/kg as profits. Therefore, contrary to the explanation by Ministry of Agriculture and Forestry (2008), we find that farmers earn the highest profits among players in the pork supply chain in Vientiane Capital.



III. Conclusions

This study aims to identify the main cause of high pork prices in Laos. In contrast to the traditional view, we find that farmers earn the highest profits in the pork supply chain. We also find that profits vary significantly between different sizes of farmers; large-scale farmers earn higher profits because they receive higher selling prices but spend less for feed than low-scale counterparts. The former suggests that cooperative sales are effective for small-scale farmers in achieving better selling prices. Finally, if small-scale farmers introduce effective mixes of complete and traditional feeds into their production, we expect pork prices in the region will decrease. Such conclusion points to the importance of diffusion of better feeding skills to small-scale farmers.

HO VAN BAC

Technical Efficiency of Rice Production in Northern Upland Area of Vietnam: Stochastic Frontier Approach

INTRODUCTION

Northern upland area has total agricultural land area of 1.400.000 hectares, in which rice area accounts for 669.000 hectare ranked 4th in Vietnam with total population of 11 million people in 2009 and more than 90% people are living in rural area. Farmer’s income depends mainly on agriculture activity such as cropping, animal husbandry, fishery raising and forestry activities. In which rice production plays an important role in household’s income, especially in the rural and mountainous area, accounting for about 25% (GSO, 2009). Moreover rice self-sufficiency also contributes to food security in upland area where public transport system is still very difficult due to high and complex topography

Some previous studies indicated that agricultural production is not full efficient, especially in developing countries like

Vietnam. And increasing rice production by improving technical efficiency is the most suitable way in short run. Therefore, the study is conducted to estimate the technical efficiency (TE), the separate effect of nitrogen (N), phosphorous (P), potassium (K) on technical efficiency, and determinants affecting on technical inefficiency (TIE) in the study area.

METHOD

To achieve the objectives of the study, cross-data at farming level was collected by face to face interview of 120 farmers in Northern upland area of Vietnam in 2011. Cobb-Douglas production function is used to estimate the TE of rice production by equation (1).

$$\ln y_i = \beta_0 + \sum \beta_j \ln (x_{ij}) + \varepsilon_i \quad (1)$$

where y_i is rice yield of i^{th} farms, x_{ij} is the j^{th} input ($j=1-7$) used by i^{th} farmer, including used seed, N, P, K, pesticide, working day and hired machine respectively. β_0 is intercept and β_j are response parameters to be estimated. While determinants affecting on TIE are simultaneously estimated by using FRONTIER 4.1c program based on equation as below (2).

$$\mu_i = \delta_0 + \delta_1 Z_{1j} + \delta_2 Z_{2j} + \delta_3 Z_{3j} + \delta_4 Z_{4j} + \delta_5 Z_{5j} + \delta_6 Z_{6j} + \omega_i \quad (2)$$

Where μ is inefficiency effects, δ_0 is the intercept term, δ_j is the parameter for j^{th} independent variables, including experience, edu level, household size, number of land plots, area variable (dummy), credit access (dummy).

RESULT AND DISCUSSION

1. Estimation of stochastic frontier production function

The coefficients of input variables were estimated by Maximum Likelihood Estimate technique (MLEs).

Variables	Parameters	Spring rice		Summer rice	
		Coefficient	t-ratio	Coefficient	t-ratio
Constant	β_0	0.628***	24.494	5.885***	19.154
Seed (X_1)	β_1	0.063**	1.683	0.068	1.410
Nitrogen (X_2)	β_2	0.076***	3.307	0.031***	2.626
Phosphorus (X_3)	β_3	0.022	0.258	0.011***	1.197
Potassium (X_4)	β_4	0.007	1.977	0.011***	2.762
Pesticide (X_5)	β_5	-0.0007	-0.376	-0.0009	-0.482
Working day (X_6)	β_6	-0.132**	-1.508	0.005**	0.051
Hired machine (X_7)	β_7	0.003**	1.997	0.003**	2.330
Model variance	σ^2	0.113***	2.416	0.079***	3.372
Gamma		0.911***	27.026	0.863***	11.873
LR-test			21.026		35.860

Note: *, **, *** are significant level at 10%, 5%, 1% respectively; $\chi^2_{(10, 0)} = 20.09$

Table 1 indicated that estimated coefficients of N, K and hired machine are positive and have statistical significance at 10%, 1%, 10% and 5% respectively in both spring and summer rice. This implies that farmers could increase their rice yield by applying more quantity of these inputs. While variables of pesticide and working day are negative and insignificant with rice yield. And the result also suggests that more application of machine were used, the higher rice yield is in both seasons. This could be explained as result of better land preparation and saving working days in rice cultivation.

2. Analysis of determinants of technical inefficiency

The estimated coefficients of experience, education level, household size, area variables are negative with technical inefficiency model in both seasons. However two variables such as experience and education are statistically significant at 10% in spring rice. And in summer rice, variables of household size and region were estimated to be negative and statistically significant at 5%. While variables of land plots and credit access were positive and significant at 10%.

Variables	Parameters	Spring rice		Summer rice	
		Coefficients	t-ratio	Coefficients	t-ratio
Constant	δ_0	2.041*	1.791	0.685	0.803
Experience (Z_1)	δ_1	-0.849*	-1.726	-0.435	-1.548
Educational level (Z_2)	δ_2	-0.414*	-1.840	-0.149	-1.379
Household size (Z_3)	δ_3	-0.294	-1.437	-0.315**	-2.523
Number of land plots (Z_4)	δ_4	0.087	0.962	0.192*	1.723
Area variable (Z_5)	δ_5	-0.626	-1.636	-0.661**	-2.238
Credit access (Z_6)	δ_6	0.140	1.513	0.115*	1.978

CONCLUSION

The study indicated that farmers in the study area still have potential to increase their rice yield by improving technical efficiency with given input and technology through the use of better practice skills. However current technical efficiency is quite high on average. Therefore promoting technology change or improving factor productivity plays important roles in long run. In addition, increasing use of a set of fertilizer inputs (N, P, K) could improve rice yield in the next crops. The study also revealed that there is a big unbalance of fertilizer application (N, P, K) among farmers in the area. Analyzing technical inefficiency revealed that increasing household labor contributed to reduce technical inefficiency in summer rice. While increasing number of land plots and credit-access had negative impacts on efficiency in summer rice.

KHAMPHILAVANH BounEua

Experiences on Softball Game and FOSA International Student Football Tournament 2012



I am a Lao JDS fellow (2011), belong to Laboratory of Food and Agricultural Policy, Department of Agriculture and Resource Economics, Kyushu University.

Any sports, my personal belief, are not only good for being healthy. We can, However, make friends through sport activities. Base on my experiences, I could make friends both local and foreign friends via doing such a sport. Sport is also a good way for relaxing and refreshing myself from doing my course. I have been played various kind of sport, however, there are two new experiences was softball and one-day soccer games

Softball Game is a game similarly with baseball game which is very popular among Japanese people. I had ever seen the game on television before, on which my feeling was boring because I had never known any its rules. When I had a chance to play the softball game with colleagues and professors among department of agriculture. Then I realized that it was really exiting and difficult game on how to bat, pitch and catch the ball. I have experienced all positions of the game. I was assigned, base on my well done, to be pitcher many games. And my Japanese colleagues told me, even though it was my first time playing this kind of sport, that my pitching as a professional pitcher. Moreover, I got more both local and foreign friends, and learnt a kind of Japanese culture through this sport. And I have been waiting more chances to enjoy the games in next year. In short, softball game is an interesting and charming sport.

FOSA (Fukuoka Overseas Student's Association) Football Tournament 2012 is a Football Game among International Students who have been studying in Kyushu. A Lao Student Team, I was assigned as a captain team, applied to take part this event in this year. There were totally 14 teams from different countries and universities. The teams divided into two groups and the competition had been taken place only one day. Therefore, at the

first round each teams had to play at least six matches and being the champion was eight matches. This was my first memorial experience on, outdoor field, playing football matches under hot weather within a day. The matches were conducted, however, based on friendship game and colorful of audiences.

These examples show that these two sport events were a my good memorial experience, and really enjoyable and cheerful tournament during my first-year course.

Experiences on Field Trips and Home Stay

Kyushu University, particularly my laboratory “Food and Agriculture Policy”, has been kindly provided me wonderful field trips during my first-year course. Ehime city in Matsuyama Prefecture, even through just two-day visiting, was a my good memory. Two things are going to talk about. First I found that most local people prefer dressing old Japanese clothes when go shopping and enjoy traditional hot spring “Onsen”. An age-old Onsen site I visited is more than 100 years old “my Sense told me.” Secondly, old public Japanese vehicles, among rapid transportation system, are still available in this city particularly old trains. Which I felt very exiting on the old trains are still providing service in a center modern city.

It is clear that a high technological developed country as Japan was integrated properly for traditional and civilization patterns.

With my sincere and really appreciate for kindly giving a hand from JICE. I received a chance for an overnight home stay with a Japanese family “an activity of Hippo Family Club.” During stay with them I have learnt deeply a local Japanese’s life style and exchanged our bilateral culture by discussing. I was also invited to join their various activities which I also made many Japanese friends and learnt more how this member group going on. The most significant, I found an assistance and harmonization among the family members.

All in all, friendship and reconciliation are outstanding among Hippo Family Club.

PANGNA PHRANAKHONE

Japanese Grant Aid for Human Resources Development Scholarship

My campus, my Fukuoka ...



Since first time of my visit to Japan in Sapporo and Tokyo in 1999 as a cultural exchange youth, and lately in Tokyo, Yokohama and Kitakyushu in 2007 for the 34th Ship for Southeast Asian Youth Program (SSEAYP),

Japan has become my first destination for re-visiting, long-term staying and studying. It was once, when I was announced as a JDS fellow, I was unexplainably excited that my purpose had become true. I was full with more excitement when I searched for the location of my applying university. Yes, it was in Kyushu, one of four greater islands in the south of Japan.

My life in Japan was started in Osaka in the name of JDS student. Many funny orientation programs were held. The most interesting program for me was the Visit to the Climate Demonstration Center in Kyoto because one of the common necessities to live in Japan is getting to know how to survive from disasters. JDS students in my batch were separated and moved to their universities. For Kyushu University (Kyudai Group), the

students were brought to Kitakyushu. “Yeah”, I remembered, it was at Kamenoi Hotel near Yahata JR Station. We spent one month there. This batch, there was no linguistic course (Nihon-Go) for us as I had heard that it was held during the previous batch. I mostly spent time to read and practice my Ramayana dance, and explore Kitakyushu City where I used to be before.

I, as a Kyudai student, had moved into Fukuoka to start my exciting journey in this city. One year passing slowly, day by day that I have experienced the Japanese lives, and of course, one highlight that I never forgot to explore was Japanese community and cultures, because I believed that I would take advantage for better adaption if I understood the root characteristics of the location. When I looked back, Fukuoka atmosphere is such similar to my hometown, Vientiane, since it is not so crowded, charmingly silent and uniquely decorated with oriental appearance.

My life in Fukuoka is mainly ongoing in Hakozaki Campus of the Kyushu University, for this, I perhaps was a JDS student moving out from Kyudai’s International Student House (Kyudai Kaikan) very early or maybe earliest, this was just boring to stay a bit far from the campus. In my campus life, I faced with smooth living, and once, with unexpected time when there was a suddenly bad news from my mother about my beloved grandmother. I was so down in dumps that she could not wait for my return with higher academic degree as she expected. With my speechless and uncontrollability, my senior Lao students had assisted to arrange all for my return flight, to fly back, to do the last thing that I could do for her is to ordain as a Buddhist monk to maintain meditation for her peaceful never-come-back depart, and came back to the study in Fukuoka after refreshing my blue mind.

The study progressed fruitfully in the passing year. I finished collecting credits from compulsory subjects. Many related lectures were conducted in English together with additional study tours to get students visualized the actual practices. The total credits to complete master degree were thirty credits, the requirement from lectures were twelve, I hurried collecting over the requirement in first semester, because many subjects were interesting, so I attended even they were not so strongly related to my field.

However, the rest of total credits will be gained more from specific seminars and thesis in the Laboratory of Agricultural and Farm Management. My supervising professor is Sensei Nanseki, he instructed me to progress my thesis with such professional direction, with this, I was pushed a lot to study unknown items by myself. Since I was not so familiar with econometrics due to my background, my works, and my previous majoring (Project Cycle Management), the professor always gave advices to me to learning, presenting, revising, and finally understanding by myself. I realized that, “To make students learning and understanding things by themselves, is more effective than teaching them directly”, this is his way of building capacity of his students. I highly appreciate for the professor and team, and really proud to be a part of this laboratory. To remove difficulties of self-study, I also have very good senior doctoral and master students, they were very supportive and helpful to explain and demonstrate what I never known before, and shared their related papers and previous experiences. Those could drive me to passing difficult time to develop my thesis with more and more progress.

Beside study, I always tried to make my Fukuoka life enjoyable and memorable by making many new friends, creating community through fine communicating with Japanese residents, e.g. Homestay, and attending cultural exchange events as much as available after schooling. With my talents of Lao Ramayana Ballets, I always feel so happy and impressive every time that I could entertain the audiences with my cultural performances which representing for the heritage of my motherland to become alive on stage in abroad. I put my shows into many Kyudai’s events, Fukuoka Oversea Student Association’s events and local event in Fukuoka Prefecture. One of the big events was to perform for the Charity World Music Festival (Fukuoka Create Festa 2012) which

made me have more friends to expand my community.

Moreover, to be JDS student, I found that JICA and its staff were very kind and helpful, they never reject to assist and facilitate, or never say “No”, even the requests were only small things. They contributed a lot to make my life in Japan flowing smoothly, especially Yoshino San and Hoashi San, my two lovely sisters.

Indeed, the first year had already passed, the upcoming year is about to arrive, and I believe that it will pass much faster, so the staying and studying duration in my campus will be seemingly shorter and shorter, I will always spend the remaining period to try my best to study, to explore, to experience and to stay here, my Fukuoka. Arigatou Gozaimasu (^^)

SODOUANGDENH Somsanouk

Life in Kyushu University

Japan is developed country and high ranging of education in the world. I am very happiness to study in Kyushu University, located in southern of japan, Fukuoka prefecture. Now I am belonging to laboratory of Eco-hydrology, located in Sasaguri City which far away from the main campus (Hagosaki) about 10 km. Every day, I spend forty-five minutes for traveling by train from my house to Sasaguri train station than take a bus to laboratory for 10 minutes. I usually go to laboratory on morning in rushing time, thus a train is crowded with peoples and I sometime missed a train. However I am impression on the transportation system in Japan as bus, train and subway, its varying convenience and ticket fee is not too expensive when compare to livelihood cost. Nowadays, I am studying about some part of hydrology system in headwater stream which located in Iizuka Mountain, so excluding of traveling from my house to laboratory but I have to take one hour by car, at least twice a week to conduct an experiment in Iizuka experimental forest. Although, long time traveling but I still satisfy of an experiment in Japan. Due to my work experience and responsibility in my country, I have selected a research about “differences on groundwater-stream water interaction in losing and gaining headwater stream”. Therefore, I spend a lot of times for hard working on digging shallow wells and piezometers along the stream for groundwater measurement. However, within a very good advising and helping from my professor and friends in the laboratory. I had completed my measuring equipment on time of my plan and be able to begin data collection. Up to now, I had been learnt a lot of hydrology and methodology for experiment in forest mountain. For Instant, how to manage and maintenance experimental devices. Especially, using modern data logging and data calibration such as Hobo sensor, Odyssey sensor as basic. Moreover, my advisor has taught me about making a simple tool for measuring water level, this is very simply, cheap and useful for everyone who have limited budget but it get good quality and accumulated data. For example, in commonly I use water elevation sensor and falling head tool to measure the height of water level inside wells, both of them are high cost and may import from oversea. But I can use electric conductivity tester instead to falling head tool for measurement, I think that this type of tool will utilize for researching in my country. In another



hand, I also in charge of water sample collecting from deep wells and overland flow plot for laboratory research so sometime I have to collect data during heavy rainfall, foggy, snowy and i often work form morning until sunset in valley area. It's seen dangerous but everyone respect to the rule as safety-first with a very good organizing and safety equipment so I never found severe accident, just some case such as cold fever during winter season and slid-down from low gradient slope in rainfall season. Nevertheless, we had exchanged knowledge through seminar in my laboratory every week. Therefore, I have knew wider of forest experimentation from another fields study perspective. Finally, I think that to achieve a study in Japanese campus. 1) Preparing the basic knowledge that related to studying life such as English and Japanese languages, statistic and a related subject on field study. Especially, how to research and accessing knowledge source 2) Making a studying Plan 3) frequently discussion with advisors, senior, and friends when confront some trouble of study. 4) Should do everything carefully and keep in rule. All above reminder had been learnt in Japan.

Hoang Dinh Chieu

The first year of master course in Kyushu University was the deep impression with a lot of sweet memories and useful experience in my heart. I am now very excited with my studying in Fishery Research Laboratory and with the daily life in Japan.

Japan is the speciality for me



The first good impression, which Japan gave me, was Japanese culture and people. When I came here, everything was very novel for me but I adapted rapidly with the life because of the help from JDS Coordinator, my Supervisor and Japanese people. They were very kind and enthusiastic to help me with all their abilities. I learned so many things from them, they are hard-working people and take all actions in law, and they always stand in line when they go to shopping or restaurants..., for example. I think all such things made the success for them in particular and for Japan in general.

Secondly, Food is special for me. Hot food is usually put in the fancy box or tray and available in every convenient store or Aeon mall. Fresh ingredients are important in traditional Japanese cooking such as Sashimi and Sushi. Sashimi, thin strips of raw fish and Sushi, slices of raw fish on top of small portions of rice flavored with vinegar, are well-known throughout the world. Some people say if you stay in Japan but I do not try Sushi or Sashimi food, it means you have never stayed in Japan. Thus, I was really excited to try them. There is a 100yen-Sushi Restaurant in front of Yamada-Denki, near international student house (Kaikan). I and some friends sometimes went there to enjoy Sushi. It became favorite food for a number of my friends. That restaurant became the place to introduce one kind of special Japanese food when I have new friends visited me.

Aha, In addition, Personal seal (Inkan) is also memorable for me. In Japan, personal seal is usually used instead of a signature for proof of identification. I can use signature in some cases but personal seal must be used in making bank account and all procedures relating with bank. Therefore, I always bring my

personal seal in my bag.

My study life in Lab

My lab is located in Tsuyazaki, not in Hakozaki campus. It is little far from Hakozaki campus so that I have to travel by train and bicycle. I catch train from Chihaya station to Fukuma station and go to Lab from Fukuma station by bicycle. It takes about 1 hour from my apartment to the Lab in total. It did not make trouble for me and in addition it gave interesting for me.

The initial period, I stayed in International student house, so that I caught train from Kashi station to Fukuma station. I had to count the number of station to get off in Fukuma station in the first time. The Fukuma station is the 7th station from Kashi station. After several times, I was accustomed to the view of Fukuma station and I could get off in Fukuma station without counting the number of station. It was really my interesting memories. One other interesting thing, I can see many beautiful landscapes, local traditional houses, Shinto Shrines along my trip as well as the taste of salt from sea beach surrounding my Lab. All these things are now the indispensable part in my life.

All types of the experimental equipment and apparatus are very modern, expensive and available in my Laboratory. I was really dazzled by the diversity of experimental equipment in the first time when I had come to my Lab. They were distributed in accordance with their functions, for example, a room for histology, a room for electrophoresis, a room for chemical, 2 areas for alive animal culture... I had spent about 2-3 months to learn how to use these equipment and apparatus before I made some real experiments. And also, there are many regulations in experiment as well as daily life in the Lab which I need to remember and follow. Fortunately, my supervisor, Dr. Prof. Yoshikuni, is very kind and enthusiastic to teach me anytime in detail. In addition, everybody in my Lab is very friendly and helpful, so I always feel the Laboratory is my second family.

Special field trip in Okinawa

Some people say if you stay in Japan, you should visit to Hokkaido, Tokyo and Okinawa. Hokkaido is the largest and northernmost of Japan's 47 prefectures, famous for large quantities of dry powder snow. Tokyo is the capital of Japan, famous for Drifting, Fashion and Technology. Finally, Okinawa is southernmost of Japan's 47 prefectures, known by exotic atmosphere with subtropical climate. Therefore, I was very happy when I had visited in Okinawa with my supervisor for 2 days in February 2012. It was a useful field trip for me.

Okinawa Island is separated with mainland by little far distance, so the rental car service is very popular for almost tourists coming to Okinawa. My Sensei and I were not exception; we rented a car to go from Naha airport to our accommodation near Motobu Town. It took about 2 hours from Naha airport to Motobu town, during that time, my Sensei introduced special places along the trip and talked about history of Okinawa, some world heritages in Okinawa such as Gusuku sites and related properties of the Kingdom of the Ryukyus as well as Shurijo Castle. Those were the places where we visited in the day after. They were very useful experiences to understand more about the history of Japan.

Our major sites were Suisan Hatchery, Marine Science Institute, Marine Aquaculture Center and Okinawa Churaumi Aquarium. These are useful places for students who are studying Fisheries, same as me. I learned many breeding and aquaculture techniques from Suisan Hatchery, Marine Aquaculture Center as well as gained so much Fisheries knowledge from Marine Science Institute. Furthermore, Okinawa Churaumi Aquarium gave me the deep impression because of its world records. Here in the huge 7,500m³ Kuroshio tank, which hold the world records for longest time kept in captivity. In addition, Okinawa Churaumi Aquarium also holds the world records for world's-First attempt whale shark reproduction, unique school of gliding manta rays and world's-

first large-scale exhibit of living corals. It was really worthy of a dazzling and refreshing experience for me.

Finally, I would like to give my sincere thanks to JDS program, all JDS coordinators and my supervisor, Dr. Prof. Yoshikuni, who helped me have chance to study in Japan and adapt rapidly with daily life as well as studying life in Kyushu University.

Ngo Minh Hai

Impressions from the study and daily life in Japan – A view back to Vietnam



As many other students who have chance to study in Japan under JDS scholarship, I would like to express my sincere thanks to the JDS program. It is also surprising and interesting when I can leave some thoughts and shares on Annual Report of JDS. Among many things I experienced in Japan since August 2011, I would like to share some small but very interesting stories, as well as my feelings related to daily life and campus activities in this beautiful country.

Clean cities

One of the most impressive things that make every foreign visitor to Japan amazing is the cleanness and safety. In fact, I wonder how Japanese can keep the cities, streets so clean like that. Landing at Osaka after a five-hour flight, I felt comfortable because of the clean environment. It is very difficult to see wastes on the street in Osaka. When I saw one man who carefully cleaned the street by only picked up each remaining cigarette, I gradually understood reasons for above thought. After that I learned how to classify kinds of wastes and left them into given boxes or different color packages made me confused; however, it became really easy after doing some times. This is, in my point of view, considered as a primary solution to keep the environment clean in Japan.

Beautiful sight-seeing and exciting excursion

Exploring Mount Fuji, seeing snow and cheery blossom are dream of many Vietnamese who like to visit Japan. So I have also tried to visit a lot of beautiful places as much as possible. The first trip exploring famous sight-seeing in Japan was to the Tower of Osaka Castle, built in 1585 and reconstructed in 1931. Then, I have visited some other places such as Itsukushima Shrine in Miyajima, Peace Memorial Park with Peace Memorial Museum in Hiroshima and Fukuoka Tower; those trips were very happy and brought me unforgettable memories. When having a trip to Aomori, heavy snow falling down and spreading over the area made me mixed. I was exciting to see huge load of white snow on the street, but sometimes my feeling was quite scared because of coldness. In addition, the field trips and excursions organized by JDS program such as the rice planting were also exciting and

provided valuable knowledge about the Japanese land and people life. I recognized that sight-seeing places in Japan may be not big compared to some beautiful places in my country but very clean and attractive. Specifically, by reconstruction, conservation and professional management historical castles, museums and Japanese style gardens have been keeping the Japanese tale stories and traditional values over time. Moreover, those places always make visitors comfortable and friendly with the nature.

Campus life in Kyushu University

At the beginning of October 2011, we moved to Fukuoka where Kyushu University located for the life of study. After a warm welcome ceremony from the University, we began to study Master program for 2 years. Strange feelings due to the difference in study environment have gradually been replaced by the friendliness and kindness of the school's professors and staff. The professors tried much to communicate and teach us with the enthusiasm. In fact, many new knowledge and new approach that I have never seen before have challenged my thoughts. One of thing I learned is the carefulness in every situation, even in smallest things. But perhaps self-study is the most valuable lesson the professors shared with us. I think this is the key to the success of Japan in term of scientific development, technology advancement and living level improvement. The school's library opens all days in week including the weekend, which helps readers self study every time. That is a wonderful environment for studying. However, one of things that can disturb learners is the noise by air planes flying over the school. Sometimes, I think it may be special.

In addition to study, the Faculty of Agriculture, the Department and my lab – Laboratory of Food Marketing- usually apply “Parties to learn and learn to parties”. Oh, it is only my joke! However, many parties were indeed amazing to me. We have monthly parties at my lab, and parties sometimes are organized at the whole department or the faculty. The parties are really interesting because they help to tighten up the relationship among students, students with professors and between foreigner students with Japanese ones. Among those parties, self-served and self-cooked parties in my lab have been impressive to me. To organize the self-cooked parties, all lab members will register the kind of food he/she wants to cook. Of course, they need to list the materials and ingredients for their food. Then, some students will prepare necessary materials for cooking at the labs. Next step, all beautiful skills at cooking will be presented. All members have chances to learn traditional culture via food of different countries, as well as to improve the relationship among students and teachers. My supervisor, Professor Fukuda and Assistant Professor Moritaka are also interested and active in making their own food. After finishing the preparation, each cook will stand up and introduce his or her food; others say thanks for his/her contribution. And the party begins! How happy and warm the party is!

An aspiration for study life in my Vietnamese university

Before we came to study abroad in Japan, we – Vietnamese students – had a meeting with the Japanese Ambassador in Vietnam. He told us that we should try to learn a lot of knowledge, understand more about Japanese culture and keep Vietnam in our mind despite of living in Japan. Until now, I have still remembered his words. Self-study, carefulness and hard-working with high responsibility I learned from Kyushu University are necessary characteristics for my work in the Vietnamese university.

Having remaining one year to study and live in Japan for the course, I will try to learn more and also visit more beautiful places in Japan. The life in Japan is peaceful and nice!

NGUYEN THI QUYNH CHI

KYUSHU UNIVERSITY- AN IDEAL UNIVERSITY IN JAPAN

Normally, in human life, we always feel that happy, interesting and significant period of time passes quickly. To me, life in Japan as a JDS fellow is that identical period of time.

Suddenly, thinking about the first day when I came to Japan at Kansai airport, it seems yesterday. When I am writing these feelings now, I have lived under Kyushu University's roof nearly one year. One year is not a long period but it is enough for me to understand partly the life and people in this beautiful Fukuoka city.

The more opportunities to communicate with Japanese people, the more understanding I know about them. The reason why all nations in the world admire them – friendly, kind and disciplined nation.

My life in Kyushu University is really a heaven because at there, I have nice friendships, safe environment, good conditions for studying and this environment forms self-studying habit and independent spirit in researching.

New students are always received special care from university, professors and friends. In my case, I got a chance to live in university dormitory for 6 initial months with the aim to get acquainted with life environment before moving out to my own apartment outside dormitory. Moreover, at each laboratory, one tutor will be assign to help us in studying. As for university, Student Office also often organizes many between student office staffs and new students. At those meetings, new students can share their difficulties and student office staffs can help them deal with those problems. Those are really precious care especially for international students.

Apart from student office, being JDSers, we will receive intensive care from JICE's staffs. Therefore we do not have to worry about anything, only concentrate on studying and doing research. JDS scholarship is really a good scholarship in looking after fellows, comparing to others scholarships in Japan.

In addition, we can participate in scientific conferences, fieldtrips which are good and informative opportunity in order to connect research and reality circumstances.

I perceive myself as a lucky person because I am one of members of Environmental Economics Laboratory under the wholehearted supervision of Professor Mitsuyasu Yabe. My laboratory seems become my family in Japan where I live in the care and help of my professor and friends. It makes me feel warmly, dispel lonely feelings when living far away from my family.

Finally, one thing which originates from bottom of my heart is that I am very proud of being a Kyushu University's student.

NGUYEN Thi Think

What have I learnt from the March, 2011 Tsunami and Earthquake in Japan?



I got the announcement of being awarded the Japanese Development Scholarship (JDS) in February, 2010. Only one month later, Japan was hit by the most serious

tsunami and earthquake in history. This news was a big shock, not only for me but also for all JDS fellows 2011 who were counting

each day to the departure. In that period, news on deaths, follow-up earthquakes, radiation were regularly updated via public media. Although staff in JICE office sent emails to all JDS fellows to confirm that the situation was not so bad as being reported, and there would be no change in the departure day, the anxiety still haunted each of us as well as our families. Some even decided to give up this scholarship.

Under that situation, I myself was also hesitated. The question “should I continue or give up this chance?” always appeared in my mind. The wish of visiting Japan – the country is considered as a legend and a lesson for all other developing countries which are on the way of becoming a developed country like Vietnam - was influenced by the worries of deadly unpredicted natural disasters. The wish, however, finally won the worries. I flew to Japan in the end of August, 2011.

My destination is Kyushu University in Fukuoka where I belong to the Food and Agricultural Policy Laboratory, Agricultural and Resource Economics Department. This area is peaceful and luckily was not affected by the tsunami and earthquake, so I found that there was not much difficulty in accustoming the new life, especially with the strong support from JDS program. The worries of danger possibly derived from natural disaster are gradually evaporated as time passes by. However, the curiosity of how Japan has been recovering from the damage still concerned me. The chance of discovering that came to me as my supervisor had a fieldtrip to Iwate Prefecture – one of the most seriously damaged areas from the tsunami and earthquake in March, 2011.

As a matter of fact, I was strongly shocked as arriving there on the first day. Even though I had known about the situation via the internet and television, I could not imagine how severe the damage was until I came there and observed it by myself. Prosperous cities became dead cities within short hours. Everything was totally destroyed. Some places where used to have 5-star hotels, big shopping centers, and schools are now empty. Around 20,000 people died. The lucky people who have survived from the twin disasters are currently arranged to live in temporary houses. However to them, especially to children, terrible moments confronting with the disasters might exist forever. I was deeply haunted by a picture that I saw in a magazine when we dropped in a bookstore there. It was about one kid whose age was likely around 8 or 9 years old. He was sleeping on the floor in a temporary house, holding tightly in hand the picture of his beloved mother who died during the disaster period.

Under that context, everything seems to be hopeless. Yet, Japan one more time has been proving to the world that they do not surrender easily. The images of trucks and workers appear everywhere we visited. They are working so hard, attempting to revitalize the cities. According to the government officer who accompanied us, they plan to rebuild the cities within 3 to 5 years. To those who have no chance to visit there, this plan seems to be unfeasible and too ambitious. I am sure that they would change their minds if they could see what I have seen there. After only one year, they have nearly finished the cleaning process and started reconstruction. Some new buildings have already been constructed on the ruins.

A natural question raised up to me is why Japan can create that miracle while other countries cannot as natural disasters occur? I am not an expert in this field to give a reasonable answer. However, in the position of an observer, I found that there are two things there which are totally different from anywhere else in the world.

First of all, prices of basic necessities such as food, water and so on did not increase in spite of the fact that everything became scarce after the disaster. Some evidences could be seen as on the second day of the field trip, we stopped at a temporary restaurant to have lunch. We ordered six sets of noodle with prices ranging from 600 to 800 yen. These prices were rather reasonable

in comparison with those in other regions. However when the waitress served the sets, we were all stunned. Their sizes were nearly doubled to the same sets served in other cities.

Secondly, one of the highest priorities of the recovering process is to retrieve the agricultural sector. This policy seems to be contrast with what we often see in other countries as solving aftermath of disasters. In other countries, food comes from outside supports while in this area food is generated by local agriculture. After the tsunami, sea water entered farm land and made soil salty, which made cultivation difficult. To deal with this problem, they removed 20 – 30 cm surface soil and then pumped fresh water to wash salt away. In doing so, the amount of salt in soil has been decreasing gradually and farmers are now able to continue farming activities to produce food for domestic demand.

The cities are being revitalized from the ruins. A miracle is being created by untiring efforts of unyielding Japanese people. Thanks Japan for showing me valuable lesson that are “nothing is impossible even in the worst situation” and “miracles can appear in a certain way that you might never think of before”.

Nong Thi Hue



The first thing I would like to share you guys that studying abroad is my greatest dream, especially

in such a developed country like Japan. Now I am here the first-year master student in Kyushu University, I am really happy! Honestly, at the beginning of my study in Japan I may felt quite nervous with the way the native people do and I did not know where to start! However, under supervising and supporting of my supervisor and the helps of my friends here, everything seemed to be easier. And now, I am sure that I really enjoys the life and study in this beautiful city.

Learning and having life experiences is only near one year in Japan gives brilliant chance for me to improve my academic knowledge and skills on sciences in general and on specific fields in particular. Moreover, this provides me good opportunities to making friends with Japanese and others who are from different countries in the world. We have had many warm partys and a variety of extra-activities, especially many field trips given by JDS programs. All things are so amazing!

Here I would like to share one part of my research.

Expression of stress-related genes in rice seedlings under FK506 treatment.

Introduction

When plants are exposed to high temperatures and perception of signals, changes occur at the molecular level altering the expression of genes and accumulation of transcripts, thereby leading to the synthesis of stress-related proteins as a strategy for stress tolerance. FK506 is an immunosuppressive drug which is specifically bind to FK506-binding proteins (FKBPs or ROFs) and inhibit their catalytic activity. Recently, *Arabidopsis* molecular genetic studies indicated that ROF-HSP90 mediates gene expression in response to heat stress and other environmental stresses (Meiri & Breiman 2009; Meiri et al. 2010). However, there is no reports about involvement of ROF or HSP90 in heat stress signal of rice. To develop molecular genetic techniques focusing

on OsROF and OsHSP90 for breeding thermotolerant crops, the present study was conducted to investigate the expression of stress-related genes under FK506 treatment. There is a possibility that inhibition of ROF activity by FK506 causes unstabilization of proteins leading to HSP induction.

Materials and methods

In the presence or absence of FK506 reagent, two-week old rice seedlings (*Oryza sativa* L. cv. Hinohikari) grown in distilled water at 25°C were subjected to various stresses such as heat stress (50°C), 20mM H₂O₂, 0.25M NaCl and chilling stress (4°C) and they were harvested sample at 0h, 1h, 3h after individual treatments. Expression profiles of *HSFs*, *HSPs*, *GolS*, *TPP* and *ROF* of the rice seedlings were analyzed by RT-PCR. In addition, effects of FK506 and thermotolerance of rice seedlings was analyzed by observing appearance and survivability of rice seedlings under heat stress.

Results and discussion

FK506 as a FKBP's inhibitor induced most of genes expression except for *OsGolS1* and *OsHSP26*. Gene expression of some stress-transcription factors such as *OsHsfA1*, *OsHsfA2* and ER and cytosol type *OsHSP90* remained constant whereas there was a little change in the expression of *OsHsfA3* and *OsTPP*, *OsFKPB62* (Fig1). In the absence of FK506, transcript levels of *OsHsfA1*, *OsHsfA2*, *OsHsfA3*, *OsROF1*, both cytosolic and ER type *OsHSP90* and *OsTPP* were constant described above under as well as both *OsHSP90s* in the presence of FK506. Particularly, transcript level of *OsHSP26* - small heat shock protein was detected only after 1 hour by heat stress treatment. Regarding to the presence of FK506 followed by different treatments, exception of both *OsHSP90s*, most of the transcript levels of stress-related genes have shown to decreased after 3 hours by heat stress. The expression of *OsGolS1* decreased after 3 hours by heat stress, which was inversive situation appeared in the absence of FK506, suggesting that FK506 have negative feedback effect on the *OsGolS1* regulation and highly correlated in the expression of *OsHsfA2* reported to be involved in regulating the expression of *OsGolS1* in response to heat stress (Fig2). It is clear that pre-treatment with FK506 indicated significantly enhancement of the tolerance in rice seedlings against the severe heat stress. All seedlings exposed to 50°C for 3 hours with or without FK506 treatment collapsed and bleached, whereas all seedlings pre-treated with FK506 then subjected to lethal heat shock were resistant (Fig 3). The observed phenotypes showed closed correlation with the transcript levels of each gene that were detected in result above. Based on these results, it was indicated that FK506 treatment contributed to thermotolerance of rice seedlings against heat stress.

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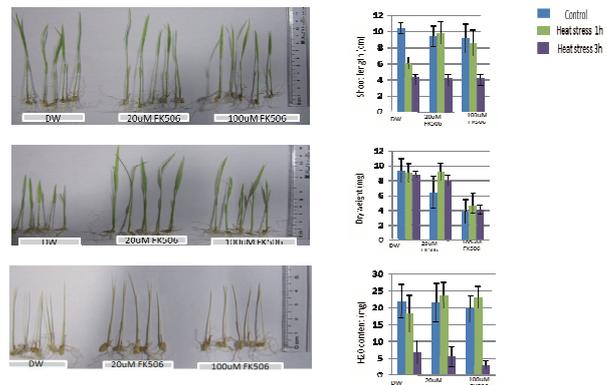


Fig3: Effect of FK506 on heat tolerance of rice seedlings. (A) (B) (C) rice seedlings were subjected to control and heat stress 50°C for 1, 3 hours, respectively. Fig4: average shoot length, dry weight and water content of rice seedling under stress conditions: control and heat stress 50°C for 1, 3 hours, respectively (A) (B) (C) respectively.

THIEU THI PHONG THU

My life as a study abroad student!



Since the day that I have gone here, Kyushu University, my thinking has been changing day by day. Japan country and Japanese people yourself are showing me that studying and living here are a true

determination. I was very grateful that I could be a JDS fellow and a student of Kyushu university which is one of the most famous University in Japan.

First of all, I would like to express my heartfelt thanks to my supervisor, Dr. Takeo YAMAKAWA, laboratory of Plant Nutrition for the guidance with all his heart and invaluable advices throughout my research. Moreover, I would like to give my thanks to Japanese International Cooperation Center (JICE), JDS program committee members from Kyushu University for giving me this chance to be learnt and studied here and also your help and care.

As JDS fellows, we have a chance to participate in field trips, international conferences and seminars. By these activities, I can learn and get a lot of practical experiences that I can apply in my country. In the first year, I attended not only the module lectures which were made by Japanese teachers for international students but also other special courses from foreign teachers. I also attended the Japanese language course, it was very useful for me to communicate with lab-mates and really interesting. Sometimes we made funny mistakes during the time of speaking practice, it helped us to relax after study hard academic subjects.

In my laboratory, there is a seminar every week and all students present their researches and other relevant documents. This is very helpful for our researches, for getting update data and also for improving presentation skills. Moreover, after presentation, Teacher gives us comments and guidance on our topics to make it to be better. We, all students in our lab comment each other very friendly and frankly concerning presentation. The first time, when I came to my laboratory, everything was new for me, I myself was worry so much that could I do or not, I even felt

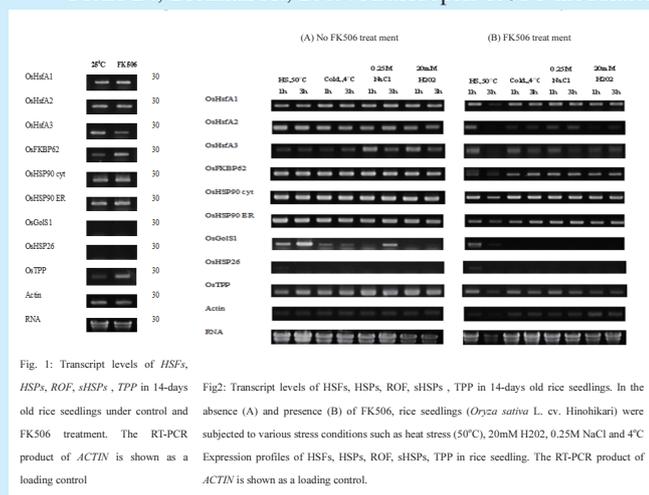


Fig. 1: Transcript levels of *HSFs*, *HSPs*, *ROF*, *sHSPs*, *TPP* in 14-days old rice seedlings under control and FK506 treatment. The RT-PCR product of *ACTIN* is shown as a loading control

Fig2: Transcript levels of *HSFs*, *HSPs*, *ROF*, *sHSPs*, *TPP* in 14-days old rice seedlings (Oryza sativa L. cv. Hinohikari) were subjected to various stress conditions such as heat stress (50°C), 20mM H₂O₂, 0.25M NaCl and 4°C. Expression profiles of *HSFs*, *HSPs*, *ROF*, *sHSPs*, *TPP* in rice seedling. The RT-PCR product of *ACTIN* is shown as a loading control.

really bad because I never did it before. But, then I felt better day by day, SENSEI who guided me minutely everything step by step with all his heart. Up to now, I myself can do experiment, I can analysis the nutrient content of soil and plant and other things that SENSEI taught me. I know that I was very lucky because I could be met a good teacher like him.

CHIM KOSAL



I am a Cambodian JDS fellow in 2011 and first year master course in Laboratory of Forest Management, Kyushu University. Study in Japan is one of the very good and unforgettable memories to me. As I have a lot of new things to learn, to know and to discover, it's kind of really interested for me.

Kyushu University is one of the best universities in Japan, and I am really enjoyed and glad to study here. The university have very good curriculum with very good Professors full of knowledge and experiences. Then following by the excursions and seminars, which allowed the students to see, experiences and learn more about the real situation or practices. For example, after finish the course of specializes subject Forest and Forest Product Science, we had an excursion to the Lumber Company (Nippon Paper Lumber, Co., Ltd. Yatushiro, Kumamoto) to see the actual process from the first stage till the final products. Also, some of the JDS excursions were really great like the Terrace Paddy Field on the 20 May 2012, which allowed me to learn and to understand more about the traditional rice plantation in the terrace area of traditional village in Japan. Furthermore, all the members in my laboratory are very friendly both Japanese students and international students. We always have tea break around 3pm, and we relax and discussion about various things, which to promote mutual understand and friendship among members in our laboratory. My Professors are really kind and helpful; he always guides me to the right way, giving encouragement and support. I am really appreciated his kindness. Moreover, the university provides full access of the facility through the Laboratory equipment and Central Library. I can access many sources of information that I want to know or research which available in the library of on the net.

Fukuoka is very beautiful city in my mind, which consist of modern life style and beautiful natural places around the city and I am really loved here very much. During vocation I have been to traditional places like Big Buddha, Dazaifu and some temples around the city. In addition, I have been to such very beautiful places like Ohikoen Park, Nokonoshima Island, Yanagawa, and Uminonakanichi. I like and interested in travelling especially natural places like above mention.

Finally, I am exciting to study in Japan in particular Kyushu University, and I am really enjoyed living in this Fukuoka city. I also would like to express my sincere thanks to the Government of Japan, JDS Program for giving this good opportunity for me to study here. I hope with this knowledge and experience will contribute to the development of Cambodia.

KOUN Pich

Annual Report of JDS Program in the Department of Bioresource and Bioenvironmental Sciences



Wow! The time has gone quickly. Now, I have already been over one year in Japan. I could not believe that one year studying in Japan has been passed. I still remember clearly the March

30, 2011 that was the day I received the official announcement from JICE Office that "You have successfully passed the final interview and become a JDS Fellow 2011-2012". To me, that was the happiest time in my student life because my dream for oversea study became truth. First of all, I would like to express my sincere thanks to Japanese Government for assisting my country (Cambodia) in any development sectors especially this Japanese Grant Aid for Human Resource Scholarship (JDS) Program. Secondly, I would like to give my grateful thanks to the Royal Government of Cambodia (RGC), to the Ministry of Rural Development (MRD) of Cambodia, to Kyushu University, and especially to Professor Dr. Mitsuyasu YABE who is my kind and helpful supervisor for giving me these great opportunities. I am really indebted to all of you.

Arrival in Japan

I arrived Japan on August 29, 2011 and it was also my first time coming to Japan. The first place where I knew was Kasai Airport. At the airport, I met all JDS fellows coming from different countries in Asia and we, all got warmly welcome from JICE staff that made us reduce nervous. After that we together moved to Washiton Hotel located in OSAKA City. We had stayed two weeks at OSAKA City where we also participated many orientations briefing about Japanese culture, education, economy, legal system and the ways of living as a foreigner in Japan. Staying there allowed me to visit some interesting places especially the unforgettable activities of disaster prevention training (earthquake and typhoon) at Kyoto Prefecture. Then, in the mid of 2011, September, we all departed to Kitakyushu where JICE Office situated in. We went there to get more detail orientations about our academic and daily life which would be started in the early 2011, October. After around two weeks staying at Kitakyushu, other JDS fellows and I who had to study at Kyushu University moved to stay at Kyushu University International Student House in Kashiuhama for six months located in Fukuoka Prefecture. It is around 20 minutes by bicycle to the university. Staying at the International Student House was so comfortable and convenient because it was closed to the supermarket and we had great chances to build fruitful relationship with other international students around the world.

Academic Life in Kyushu University, Fukuoka-Japan

Kyushu University is one of the famous universities in Japan and it is also the biggest university on the Kyushu Island. There are about two thousand international students from more than eighty countries around the world. I am so proud of being an international student of Environmental Economic Laboratory of the Faculty of Agriculture, Kyushu University. Studying in Japan is the highest preference during my educational period. In order to fulfill the university academic requirement, international master students have to obtain at least 30 credits of total subjects.

Academic life started after a formal entry ceremony in 2011,

October. All lectures for the master course under JDS program are conducted in English. This special course is called International Development Course which provides essential background in the field of Agriculture and Resource Economics, Advance Technology in Agriculture and International Rural Development, etc...All above mentioned subjects are very important for academic resources to support diverse studies and researches. To gain varieties learning methodologies, national and international professors are invited to provide the lectures. During the lectures, professors and the students have great opportunities to share ideas, experience exchanges related to the study field.

Honestly, be informed that I was very warmly welcome by professor, staff and friends from Environmental Economic Laboratory which is supervised by Professor Dr. Mitsuyasu YABE. In this laboratory, everyone is very kind, friendly and keen to help each other. Let me talk about laboratory activities. One of these activities is the regular seminar which is conducted every week. Every student has to present his/her research work, Statistic Lectures and Econometrics. It is also good opportunity for the students to practice doing presentation and show up their research progresses. In presentation and discussion session, comments, suggestions and recommendations from friends and professors have become high valued and good guidance to improve what and how I am learning.

Field Trip

During the first year period, I have been many places in Japan since my arrival. There were many excursions and field trips organized by professors, JDS and International Student Association to allow the students observing different technologies of Japanese agriculture. One example of these excursions was the excursion to organic rice farm using ducks in Iizuka City organized by Environmental Economic Laboratory under the supervision of Professor Dr. Mitsuyasu YABE. We first visited the the Iizuka City Instruction Center where is directly providing agricultural extension services such as technical agricultural knowledge and skills to farmers. This center provided us a wide range of information about rice, vegetable, flowers, food and stockbreeding. And then, we visited Mr. Furuno (PhD) integrated rice and duck farming. The organic rice and integration farm has been a good model and very interesting. He also explained how to integrate rice field and ducks growing together. He also showed the comprehensive systems and the concrete experience in order to help us better understand about organic production. He is not doing integrated farming but also doing experiment research at the same time to find the best way between direct seeding and transplanting seeding for cultivating rice and raising ducks together. The end product is not only rice but also duck meat, fish, organic farming productions, friendly environment, good taste products and having low labor cost requirement. I found that this excursion provided me the excellent opportunity to gain the real Japanese farming experience especially organic farming. All provided knowledge and skills are very useful which I can apply to my future work and contribute to Cambodia fruitfully. Moreover, attending meeting, conferences, symposiums are also other methodologies of learning styles. There were a lot of professors with different fields, educational levels from the government, NGOs, universities and institutes to share and provide fruitful knowledge.

Everyday Life

Beside school, I have always spent time on shopping and doing sport activities with friends. In Kyushu University, Hakozaki Campus, there is a gymnasium stocked with varieties of sport equipments and playgrounds for students. In an academic life, it is sure that stress will disturb human feeling, so playing sport is the best way to release it.

Finally, it has been a year since my arrival and time has gone quickly. I feel I am adapted to living and staying here. I

have learnt a lot during this one year but many things are still in my waiting list to learn more. Believe me, an academic life is not easy to come through but everyone has to take it into account that studying hard, help each other and regular consulting with professors are the better approaches to reach the goals, so that we could maximize those available capacities and resources in order to get optimal knowledge, skills, experiences and technologies. Thus we can help develop our beloved home country upon return. Once again, I would like to express my sincere thanks to JDS (JICE), supervisors, professors, staff and friends for supporting me to overcome all difficulties.

THUCH Phalla



I am a JDS fellow 2011 and the 11th Batch of Cambodian JDS Fellow. I am first year of Master Student. My laboratory is Forest Management, located at Hakozaki Campus. Associate Professor **Nobuya Mizoue** is my academic supervisor.

First Arrival in Japan

Japan is one of my destinies. I hope one day I could visit Japan. Now my wish came true. I got JDS scholarship (Japanese Development Scholarship) 2011, for studying two years of master course. I arrived Japan on 28th August 2010, by Kansai Airport, Osaka. It was my first time in this developed country. When I reached to Japan, I noticed about infrastructure of this country. There are several high ways across the city. On the other hand, transportations such as subway, railway and bus are very busy with crowded of people in every day.

I spent ten days in Osaka, the third biggest city in Japan. During my stayed there I was provided orientations about Japan such as living style and rule, history, education system and the most attractive topic was Why Japan can developed its self very fast. The lecturers mostly were Professor (sensei) from different universities in Japan. Moreover, I met many students came from different countries.

After I spent days in Osaka, I had moved to Kitakyushu by Shinkansen. It toke one hour and was my first time. I arrived kitakyushu with other students at noon time. We stayed at Kakmanoi Hotel near Yahata station. Everybody looks tired, but in the afternoon we had other assignment to do. The weather in August was really hot, but with this weather I can adapt it as in my country. In Kitakyushu we had given orientations by Jice officers and made some documents like Allien Card(for resident who live in Japan more than 3 months) , national health insurance and open bank account.

Daily life in Fukuoka

On of 29th Sep.2011, I moved to Kaikan(Kyushu university international student house). I stayed with other 2 Cambodian students, because this year no available for single room, only families room. This dormitory took 20 minutes by bicycle and 30 minutes by bus to university. About bicycle, I never use it for more

than ten years ago, while I studied in high school. I do not expect to take bicycle again, but bicycle is very famous transportation in Japan.

For daily life, I have no problem because I can adapt with all kinds of Japanese food and by the way, environmental here is very good. In addition, after class, I spent time to play football with my friends or go to gymnasium in Hakozaki campus to do some exercise. Moreover, I do not feel alone because there are 12 Cambodian students in Kyushu University. At weekend we enjoy trip to somewhere or have a small party together. In addition, Hakata and Tenjin are the best place in Fukuoka for shopping, eating and entertainment. So then these places can help you to release stress after work hard on academic life.

Academic life in Kyushu University

In October 2011, academic started. There are two terms in each fiscal year, fall and spring. It started from October to February (Fall) and April to August (Spring). Totally we need to complete 30 credits for two years of Master course. The courses existed compulsory subjects (18 credits) and module subjects (12 credits).

Library is one of the most important places for academic life. Kyushu university library provide a plenty of useful materials for study and research. In addition, you can access internet everywhere in university, which makes your academic life is easier.

Laboratory is like an office. There are twenty members in laboratory of Forest Management (four Cambodian students, one Myanmar students and 15 Japanese). At there I can read book, do assignment and communicate with other Japanese and international students, especially I can consult with my sensei and other senior on research plan. They are very kind and honest. Moreover, in my laboratory has tea break every day at 3 pm. In this occasion is a very good time to relax from study and work hard.

In kyushu university has tutor system for all scholarship fellows within the first 6 months. This system is very helpful to assist students at the beginning of both daily life and academic life. Tutor can be Japanese or international student according to assign from each laboratory. By the way, there are some association in Kyushu University such as Kyushu University Foreign Students Association (Kufsa) assist students with general matters. Moreover, Kufsa has prepared several events every year for international students to understand about Japanese culture, history and sport event. Through these events you can make new friends and enjoyable.

Field trip

After toke class, there were several field trip with my laboratory members and other international students. My first trip was to Kagoshima to attend international seminar with all my laboratory members. Second was to Yufuin city, Oita prefecture. The aim of this field trip is to understand about thinning and measure tree. Third field trip was to Nippon Paper Lumber, Co., Ltd, Yatushiro, Kumamoto prefecture to see production cycle of wood. This field trip was part of the Specialize course on Forest and Forest Products and lead by Associate Prof. Nobuya Mizoue. Anyway, there are still a lot of excursion will be organize by Faculty of Agriculture in next time and I do hope to join those excursion.

Finally, time is really fly. Now it has been eleven months in Japan. I noticed that I can adapt living condition and studying. I had learnt a lot from class and my laboratory, but I still have many things to do and need to study more. Once again, I would like to say thank to my sensei, laboratory members, JICE officer and student section officers for help in both academic and daily life, especially, Japanese Government that give me a chance to study here. I hope that after I graduate I will use my knowledge to develop my country, CAMBODIA.

Kyi Moe

Memorial times in Japan



When I was in childhood, I studied about Japan in the History Subjects of Elementary School. Among the countries in the world, Japan was absolutely small country but very famous because of creative technologies. At that time I watched the famous Japanese drama episodes, *Oshin*, on television in my country. While watching *Oshin*, I fell in love with Japan and started dreaming of coming to Japan on some days. As a child, there were so many things about Japan that captivated me while enjoying that drama episode. Especially, the beautiful dress of Japanese girls which is called *Kimono*, the polite and kind behavior and speaking style of Japanese men and women, Japanese letters (*kanji*) which liked pictures to me, the sticks (*Hasshi*) with which they eat, the Mt. Fuji and white snow, the beauty of the red leaves, the Cherry flowers and the calmness of the green mountains were surprising to my heart.

After the second war, Japan was mostly destroyed in the geographically and economically. But now it's amazing! Japan became a technology-well-developed country as well as occupied the top position in the economics sector in the world. Why Japan became a rich country? How they struggled? How they recovered? How they learned and created the advanced technologies? How they relayed the technologies to the young bloods? Many questions were crowded in my head since childhood. I dreamt about study in Japan. One year ago, I became a lucky man because my dream became true. I got acceptance letter from Japanese Grant Aid Human Resources Development Scholarship (JDS), and a chance to study at Kyushu University. I got an opportunity to build a bridge between Japan and Myanmar in the case of agricultural technology as well as exchanging cultural heritage.

Living and studying in Japan was exciting! As a foreign student, the wonderful, amazing and surprising things were warmly welcome to me. Everyone might get experiences in the 'culture shock' to some degree. The first few days were challenging to me deal with jet lag, cultural and Language fatigue, cultural differences, attitudes, life styles, food and different teaching style. As the time run, all were positively transformed into the greatest benefits for me in the study in Japan.

On the very first day of study in Kyushu University, I was warmly welcomed by my supervisor, Dr. Takeo Yamakawa. Because of his kind encourage and thoroughly teaching, I didn't have any difficulties in my research. Actually, I felt that my professor took care of students like his sons and daughters. He always smiled and actively worked in the laboratory. He wants his students to try the best every time. He shared to me not only knowledge in Plant Nutrition Field but also his experiences in his life.

During the first semester, I attended some classes which are necessary for master degree. Japanese teaching style mixing with European style was strange to me. In the class room, the teacher used the student's oriented teaching style, and discussed with student. The teacher opened the students' creative thinking and motivated them to participate in discussion and group activities.

The times I was in class room were happy and enjoyable to me. I felt that the relationship between teachers and students in Japan was friendly and closed, but all students were obedient to teachers and paid respect to them. Japanese teachers were very work-hard, and kind to students. They were well qualified in their specific field and willingly to teach and share the knowledge to student.

As a foreign student while studying in Japan, I studied not only in the major field but also in Japanese culture and language. Kyushu University offered Japanese Language classes to the international students. Through Japanese Language class, the students from different countries could learned Japanese language as well as exchanged the culture and knowledge each other. And then, these classes allowed building the bridge of friendship between the international students. Whenever the parties were celebrated, I got many chance to chat with Professors and other foreign students. We shared knowledge, experiences, ideas and our own cultures. Although we came from different countries, I felt that we were the same family.

To fully immerse in Japanese culture and life style, I enjoyed exciting field trips. I went to Ukiha town, **Fukuoka** field trip and practiced terracing rice transplanting together with Japanese farmers. Although Japan became a well-developed country, they still maintained their traditional system, customs and cultures. I learned about good altitudes of Japanese people by having lunch and drinking green tea together. Normally, Japanese people are quite, but they are willingly to help whenever we request anything. In a very short study of Japanese culture during limited time, I felt in depth Japanese cultures and traditional wearing styles. Japan has a rich cultural tradition, and many pastimes have been handed down from one generation to the next.

And also I joined Motooka Field Trip. On that trip, I could discuss with young Japanese farmers who grew rice, tomato and rose. I studied the green house technologies in tomato and rose. After that, presentation was given group by group. We chose the topic and discussed it to present together with young Japanese farmers. In the evening, we had dinner together with all participants in that trip. We all were enjoyable and happy in Motooka Trip. Travelling to Japanese Agricultural Farm and house gave us a lot of knowledge. I found the beauty and culture of Japan, the kindness of Japanese people, and the cuteness of Japanese women much more than I dreamt. Studying in Japan is interesting to me and valuable to me.

In conclusion, taking great opportunity to study in Kyushu University by JDS program, I will surely gain a lot of advanced skills and knowledge to contribute my home country. I do hope that I will be able to build a bridge between Myanmar and Japan in the Agricultural Sector. The kind behavior, the gentle speaking style, the beautiful dress of Japanese girl and wearing style and the smart wearing style of Japanese men, and the good altitude of Japanese people are deeply memorized in my life. The times I studied at Kyushu University were never forgettable and memorial events in my heart.

Myo Zaw

People said that “Time pass more quickly in proportion as you are happy”. I am not sure that it really means so for other. As for me, I realized that I have passed almost one year in Japan even when I was writing this annual report.

Firstly, I would like to express my gratitude to Japanese Government and JICE for giving great chance to study in Kyushu University.

I arrived at Kaisai International Airport on 29th August 2011 and stayed in Shin Osaka Washington Hotel Plaza for two weeks for the orientation. I have learnt ‘Japanese Society and Culture’, ‘Education in Japan’, ‘Japanese Politics and Administration’



and other lectures. But in the second day of the orientation, I got fever and I couldn't stand any more for attending the lecture and I asked JICE staffs that I wanted to see a doctor. As soon as I had asked, they arranged to go to hospital and I had to be hospitalized at Osaka Kaisei Hospital for three days. I was surprised that JICE staffs are very kind and take care of me. Although I missed the trip to Kyoto and Disaster Prevention Center, I have got unexpected experience of hospitalization. After that I continued the participating in orientation and we had to move to Kittakyushu. At the Kokura Station, JICE staffs from Kittakyushu office (now in Kokura) welcomed to us and asked who me was and took more care of me. My health condition was recovered and I had to do medical check up again in Kittakyushu. I transferred to Fukuoka at the end of September and started my academic study in Institute of Tropical Agriculture, Kyushu University without any health problem. I really indebted, therefore, to Mr. Ono, Director and other staff of JICE Kansai Office for their memorable looking after me during the hospitalization.

Life in Kyushu University+

After studying in Kyushu University which is one to the top Universities in Japan for one year, I have got a lot of knowledge and valuable experiences. I had taken five module subjects to fulfill the compulsory credit for Master Degree in the fall semester. The lecture were well organized and given by the professors from different laboratories. Although all of the lectures are not related to my field of study I have got big opportunity to extend my knowledge concern with agriculture. In the spring semester I attend the specialized subject given by my academic supervisor. Moreover I attended to special lectures which are related to my research thesis given by visiting professors from the other Universities and Professors from Kyushu University.

Kyushu University Library is very convenient for literature searching. The library staffs are very helpful. When I searched the journals for my research, I cannot find the required journals because there are so many books on the book stack. So, I went to the information counter and asked for help. Liberian taught me patiently how to search books. I attended the training on utilization of RefWork application which was given by library staff. This application software is useful for collecting the literature as database and arrangement the literature citation for thesis and research papers writing.

As the senior fellows, we have no chance to attend intensive training in Japanese Language by JDS program. I started to learn Japanese Language in Kyushu University. I have passed J1 and J2 (beginner's levels). I enjoyed in these classes because the teachers from Japanese Language Class (JLC) are very kind and patient to students and I got many new friends from various countries. Although we can use English language in the campus, Japanese language is essential for daily live such as shopping, catching train and bus and etc...

Apart from the study times, there are many enjoyable trips organized by JDS program, Kyushu University Foreign Students Association (KUFSA) and Fukuoka Oversea Students Association (FOSA) for recreation. My first one is Nagasaki trip which was arranged by the KUFSA on 26th November 2011. I visited to

Glover Garden, Atomic Bomb Museum and Peace Park and had lunch in Chinatown in Nagasaki. Next, I went to Ukiha for planting rice in terrace paddy field and organic rice Farm using ducks in Iizuka City which are arranged by JDS program. Moreover I got a great chance to see Samurai drama (Kabuki) on 3rd June 2012 which is sponsored by Nakagawamachi International Cultural Exchange Circle. It was very interesting. I also participated in the field trips and study tours organized by the lectures. I have got many experience and knowledge from those trips.

I spent most of my study times in laboratory for doing my research. Although I had some difficulties in my research work, I can overcome by the guidance and help of my academic supervisors. Finally, I would like to extend my gratitude to Professor Kazuo Ogata and Assistance professor Masaru Matsumoto for their invaluable guidance and fruitful suggestions for my study.

TUAL CIN KHAI

Reminiscence of a *Ryugakusei*



As a forestry student, I want to compare Japan and Japanese to a unique ecosystem of mangrove that seems simple at first glance by the homogeneity of its forms. The more you go inside, however, the more you will find its uniqueness and more complex ecosystems. The Japanese, a homogenous people do have a unique culture and style of living that cannot be compared with that of other people in the world.

In fact, I have been in the opinion that Japan and Japanese people are no longer strange to me. My memory could often call on how I had some enjoyable time to studying basic Japanese in Kagoshima and how I hanged around in Miyazaki as a student though these were left as a past history. Afterward, I got back to my home country, and I still remember how we, together with the JICA mission, confronted the intense heat of the semi-desertification region under the Dry zone afforestation projects in the central Myanmar. Again, under the dedication of mangrove rehabilitation project, I had the privilege to spend some time in both Okinawa and the Ayeyarwaddy delta in Myanmar, say until prior to leaving for Japan as a JDS student in 2011. That is why I thought myself quite acquainted with Japan and Japanese people. But, now, I am not quite sure if I know about my host. I have started to know that I know little about them.

As the so-called *Ryugakusei* (International student), what we know all about Japan is that, with the courteous, self-disciplined and industrious citizens, Japan is one of the most industrialized and safest countries in the world. With all slick systems and technologies, the centuries of developments of the arts, the cleanliness and smooth organization, we hope we may not be faced with any major problem that we cannot cope with. But in reality, what we have to be concerned mainly about during our stay in Japan is the people and cultural differences, not the physical impact. Thus, in my opinion, cross-cultural understanding, rather than any other things, will be of great importance for both of our host and us, the visitors.

In Myanmar, to give an example, we stand firmly with folding arms in front of the teacher, while the Japanese may in posture of standing straight back. Standing with arms folded is the way we use to show respect and is an accepted formal manner. In contrast to this, this manner indicates an opposite meaning in Japan. I have to constrain myself not to fold my arms here in Japan. Besides, eye contact is made at minimum as it never meant

honesty or confidence in Japan, but rather a sign of challenge or menacing attitude. So, it would be considered impolite to maintain eye contact with your *Sensei* (Teacher). Right! You don't need to misjudge your Japanese partner who avoids eye contact with you while having conversation. Similarly, if you frown during a conversation, he/she will read it not as an indication of your difficulty in understanding, but as a sign of your disapproval or even hatred for him/her. Perhaps you may feel rejected when people around you are murmuring in the strange language that you don't understand or when your smile at them on the street is ignored? This is but because the Japanese exchange greetings only with acquaintance; they just don't have a custom to smile at strangers.

It is said that people in Japan are relying much on non-verbal communication because they believe that a person's inner state is revealed more by such non-verbal communications as facial expressions, body postures, gestures, etc. than by his/her words. They often tend to look for the possible hidden meaning behind the spoken words, and thus, in a consequence they might over-interpret the spoken words. For instance, if you say in the lab, "Don't you think it is cold today, isn't?", then your Japanese friend may close the window or prepare to open the heater. Generally, our host treats us with great courtesy and with genuine warmth. Their helpful mind and over-interpretation can sometimes only occur as overreaction.

If I were asked to leave message for my JDS colleagues, I would recommend them to take advantage of constant exposure to Japan by learning their language and exploring their way of life, culture, etiquette and propriety. Basically, English is enough for the study program but knowing Japanese will be a huge asset for daily life. At least, without a little bit of language skill, name and things in Japanese are quite hard to remember. One of my friends once went to buy sugar and came back with a packet of salt. Another friend who went to have haircutting came back with almost bare-headed, for in the barber shop he nodded and said 'Hai' (Yes) to whatever asked by the barber. Language barrier can be such a constant reminder in every facet of daily life.

Learning propriety of Japanese and familiarity with their way of life will be very much helpful to win respect and to be more efficient in what you do during your stay in Japan. To socialize with others in harmonious manner is believed to be the foundation of Japanese society which puts priority on avoiding improprieties or not causing discomfort to others. To bother other people or to lose temper in public is regarded most embarrassing in Japan. They apologize profusely even for the slightest inconvenience they may cause. *Sumimasen* (Sorry) and *Arigatou* (Thank you) seem to be the two key-words to smoothen personal relationship as these two are used many times in society. As the saying that goes, "When in Rome, do as the Romans do", everyone is recommended to "Do as the Japanese do when in Japan".

Indeed, Japanese are too polite, honest and gentle that it is not always possible to behave in the like manner they do. June 19 of 2012 will always be of a memory in my life. It has truly been not because it was my birthday or the day typhoon fiercely hit Kyushu. Around noontime on that day, I marched as usual by bicycle from Hakozaki campus of Kyushu University to the Starbuck Coffee shop. As I stopped to wait the green traffic-light, a young boy suddenly caught me and returned my wallet. I did not even notice that I had dropped it somewhere. The honest Japanese young boy had to run after me for quite a long distance since I was riding the bicycle quite fast. Sweating and deep breathing, he did not even seem to hear my words of thank-you as he rushed to continue his way back. While being stared vacantly, I whispered myself, "So, this is Japan!" At the same time I asked myself, "What if you were the one who found the wallet?"

Afterwords: Thanks to Mr. PL Mangno (The Chinese University of Hong Kong) for his advice and comment.

7. List of Subjects and Supervising Professors for International Development Research Course (Academic Year 2012)

Division	Laboratory	Professor	Associate Professor	Assistant Professor
Bioresource Sciences				
Agricultural Bioresource Sciences	Plant breeding	Atsushi YOSHIMURA	Hideshi YASUI	
	Crop Science	Mari IWAYA-INOUE	Takashi YUASA	
	Plant Production Physiology	Osamu UENO	Kazuyuki SAITOU	
	Silkworm Science		Takahiro KUSAKABE	Jae Man LEE
	Zoology	Hiroshi IIDA		Takane KANEKO
	Entomology	Osamu TADAUCHI	Satoshi KAMITANI	
	Plant Pathology	Kenichi TSUCHIYA	Naruto FURUYA	Minoru TAKESHITA
	Insect Pathology and Microbial Control	Susumu SHIMIZU	Chisa YASUNAGA-AOKI	Kazuhiro IIYAMA
Insect Natural Enemies	Masami TAKAGI	Takatoshi UENO	Midori TUDA	
Animal & Marine Bioresource Sciences	Advanced Marine and Marine Bioresources		Hironori ANDO	Shozo TOMONAGA
	Functional Anatomy	Shoji TABATA	Shotaro NISHIMURA	
	Reproductive Physiology	Masa-aki HATTORI	Nobuhiko YAMAUCHI	Tomoki SOH
	Chemistry & Technology of Animal Production	Yoshihide IKEUCHI	Ryuichi TATSUMI	Wataru MIZUNOYA
	Regulation in Metabolism and Behavior	Mitsuhiro FURUSE	Masataka SHIMOJO Shinobu YASUO	
	Animal Production & Ecology		Takafumi GOTOH	Yutaka NAKANO
	Marine Biology	Michiya MATSUYAMA	Tatsusuke TAKEDA	Akihiko YAMAGUCHI
	Fisheries Biology	Shigeo KAWAGUCHI	Noritaka MOCHIOKA	
	Aquatic Field Science	Michiyasu YOSHIKUNI	Shin OIKAWA	Norio ONIKURA
Marine Environmental Science	Yuji OSHIMA		Yohei SHIMASAKI	
Agro-environmental Sciences				
Forest Sciences	Plant Metabolic Physiology			Michito TSUYAMA
	Silviculture	Susumu SHIRAIISHI	Koichiro GYOKUSEN	Kotaro SAKUTA
	Forest Production Control	Shoji OHGA	Shinya KOGA Tsutomu ENOKI	Naoaki TASHIRO Yasuhiro UTSUMI Takuo HISHI
	Forest Management	Shigejiro YOSHIDA	Nobuya MIZOUE	
	Forest Policy	Noriko SATO		
	Erosion Control	Tetsuya KUBOTA		
	Ecohydrology	Kyoichi OTSUKI	Takao SETSU Tomo'omi KUMAGAMI Atsushi KUME	Masaaki CHIWA Hikaru KOMATSU
Bioproduction Environmental Sciences	Irrigation & Water Management	Yoshiyuki SHIONGI	Tetsuro FUKUDA	Kozue YUGE Atsushi MARUI
	Water Environment Engineering	Kazuaki HIRAMATSU	Masayoshi HARADA	
	Environmental Soil Engineering	Masami OHTSUBO	Takahiro HIGASHI	Motohei KANAYAMA
	Environmental Geochemistry	Shin-Ichiro WADA		Yuki MORI
	Agricultural Meteorology	Masaharu KITANO		Kenji WAKIMIZU
	Bioproduction and Environmental Information Science		Yasumaru HIRAI	
	Bioproduction Engineering	Eiji INOUE	Takashi OKAYASU	Muneshi MITSUOKA
Postharvest Science	Toshitaka UCHINO	Fumihiko TANAKA	Daisuke HAMANAKA	
Agronomy & Environmental Sciences	Horticultural Science	Hiroshi OKUBO	Akira WAKANA	Michikazu HIRAMATSU
	Agricultural Ecology (University Farm)	Kei NAKAJI	Toshihiro MOCHIZUKI Yukio OZAKI	Kaori SAKAI
	Environmental Control for Biology (Biotron Institute)	Jiro CHIKUSHI		
	Tropical Crops & Environment (Institute of Tropical Agriculture)	Kazuo OGATA		
	Bioresources and Management		Keiji TAKASU	
	Sustainable Agricultural Production			
Sustainable Bioresource Science	Wood Science	Kazuyuki ODA	Junji MATSUMURA	Masumi HASEGAWA
	Wood Material Technology		Noboru FUJIMOTO	
	Forest Chemistry and Biochemistry		Toshihiro ONA	Koki FUJITA
	Bioresources Chemistry	Hiroyuki WARIISHI	Takuya KITAOKA	Hirofumi ICHINOSE
	Systematic Forest & Forest Products Science	Ryuichiro KONDO	Yuji TSUTSUMI	Kuniyoshi SHIMIZU

Division	Laboratory	Professor	Associate Professor	Assistant Professor
Agricultural & Resource Economics				
Agricultural & Resource Economics	Environmental Economics	Mitsuyasu YABE		Goshi SATO
	Agricultural Policy	Shoichi ITO	Hiroshi ISODA	Hisamitsu SAITO
	Farm Management	Teruaki NANSEKI		Shigeyoshi TAKEUCHI
	Quantitative Economics of Food Industry		Koshi MAEDA	Satoshi HOKAZONO
	Food Marketing	Susumu FUKUDA		Masahiro MORITAKA
	Advanced International Development of Agriculture			
Bioscience & Biotechnology				
Molecular Biosciences	Biochemistry	Makoto KIMURA	Yoshimitsu KAKUTA	Hisanori TAKAGI Takashi NAKASHIMA
	Marine Biochemistry	Miki NAKAO	Tomonori SOMAMOTO	
	Marine Resource Chemistry *	Makoto ITO	Nozomu OKINO	
	Applied Plant Science	Shoji YAMASHITA	Etsuko NISHIMOTO	
	Plant Nutrition	Ken MATSUOKA	Takeo YAMAKAWA Akiko MARUYAMA	Masamichi KIKUCHI (Research Associate)
	Molecular Gene Technology *	Satoru KUHARA	Kosuke TASHIRO	Shigeru MUTA
	Protein Chemistry & Engineering	Yoshizumi ISHINO		Takeshi YAMAGAMI
	Pesticide Science		Akinori HIRASHIMA	Naotaka YAMADA
Systems Biology	Applied Biological Regulation Technology *	Masahiro OKAMOTO	Taizo HANAI	Hiroyuki HAMADA
	Cellular Regulation Technology *	Sanetaka SHIRAHATA	Yoshinori KATAKURA	Kiichiro TERUYA
	Silkworm Genetics	Yoichi ASO	Yutaka BANNO	Koji YAMAMOTO
	Plant Genetics	Hikaru SATOH	Toshihiro KUMAMARU	
	Metabolic Architecture Design *	Hiroyuki WARIISHI		
	Bio-Process Design *	Fumihide SHIRAIISHI		
	Metabolic Regulation Research *	Shigeki FURUYA		
Applied Molecular Microbiology & Biomass Chemistry	Soil Microbiology	Kenji SAKAI	Sadao KAWAGUCHI	
	Applied Microbiology	Kaoru TAKEGAWA	Sadazo YOSHINO	
	Microbial Technology *	Kenji SONOMOTO	Jiro NAKAYAMA	Takeshi ZENDO
	Biomacromolecular Materials *		Daisuke TATSUMI	
	Microbial Genetics	Toshihisa OHSHIMA	Toshio HARA Katsumi DOI (Senior Asst. Professor)	
	Biomaterial Design *	Tetsuo KONDO		
Food Science & Biotechnology	Nutrition Chemistry		Masao SATO	Bungo SHIROUCHI
	Food Chemistry *	Koji YAMADA	Hirofumi TACHIBANA	Michiko NONAKA (Research Associate)
	Food Analysis *		Toshiro MATSUI	
	Food Process & Engineering	Mitsuya SHIMODA	Noriyuki IGURA	Seiji NOMA
	Food Hygienic Chemistry	Takahisa MIYAMOTO	Ken-ichi HONJOH	
* belongs to the Department of Innovative Science and Technology for Bio-industry in the Doctor's course				
Innovative Science & Technology for Bio-industry **				
Bio-System Design	Applied Biological Regulation Technology	Masahiro OKAMOTO	Taizo HANAI	Hiroyuki HAMADA
	Molecular Gene Technology	Satoru KUHARA	Kosuke TASHIRO	Shigeru MUTA
	Food Analysis		Toshiro MATSUI	
	Microbial Technology	Kenji SONOMOTO	Jiro NAKAYAMA	Takeshi ZENDO
	Metabolic Architecture Design	Hiroyuki WARIISHI		
	Bio-Process Design	Fumihide SHIRAIISHI		
Functional Biomaterials Design	Marine Resource Chemistry	Makoto ITO	Nozomu OKINO	
	Food Chemistry	Koji YAMADA	Hirofumi TACHIBANA	Michiko NONAKA (Research Associate)
	Biomacromolecular Materials		Daisuke TATSUMI	
	Cellular Regulation Technology	Sanetaka SHIRAHATA	Yoshinori KATAKURA	Kiichiro TERUYA
	Metabolic Regulation Research	Shigeki FURUYA		
	Biomaterial Design	Tetsuo KONDO		
** opens only for the Doctor's course.				
	Foreign Student Support & International Affairs		Mako NAKAMURA (Senior Asst. Professor)	
	International Education Center		Layne WESTOVER	
			Chowdhury VISHWAGIT	
			Hisako NOMURA (Senior Asst. Professor)	
	International Faculty Members		Amelia B. HIZON (Senior Asst. Professor)	
	Global 30 Project Coordinator		Hisako NOMURA (Senior Asst. Professor)	
	Open Problem Study Program		Ik Joon KANG	
			Tohru SUZUKI	

8. Course Description of special course (Master's Course)

The Graduate School of Bioresource and Bioenvironmental Sciences offers the special course, the International Development Research, which only opens for international students. The new semester for the special course begins fall semester on October 1 each year followed by the spring semester in April.

(1) Course description

The special course is constructed with lectures, practicals, seminars and tutorials. Students are required to obtain 30 hour credits with a minimum passing grade of 60%. The offered subjects of lectures are presented in Tables 1 to 3. Table 2 shows the outline of the course. Compulsory subjects consist of 12 hour thesis credits and 6 hour credits of laboratory seminars. Students can also take 10 hour credits of module subjects, and 2 hour credits of specific subject offered by the department a student belongs to. See the detail of the module subjects in Table 3.

(2) Opportunity to learn Japanese

The JDS students are expected to learn Japanese language during the course, though it is not compulsory. Learning Japanese language enhances communication power and enriches their daily lives.

(3) Thesis work

All the thesis works are conducted in English. A research topic for the thesis is determined over the discussion with your major advisor.

(4) Expected degree awarded

In the end of their course work, specifically in the spring term of their second year, students are required to present their research results and submit their master theses to the examination committee of the Graduate School of Bioresource and Bioenvironmental Sciences. The committee evaluates overall performance, and the students with satisfactory performance are awarded the Master of Science (M. Sc) degree.

Table 1. Master's course curriculum

Code*	Subjects	Credit	Semester**			
			I (F)	II (S)	III (F)	IV (S)
C01	Master's Thesis Research I	6	6			
C02	Master's Thesis Research II	6			6	
C03	Seminar in Specified Field I	2	2			
C04	Seminar in Specified Field II	2		2		
C05	Seminar in Specified Field III	2			2	
	(Subtotal)	(18)				
M01	Fundamentals of Agricultural Sciences	2	2			
M02	Biological Resources: Utilization and Conservation	2	2			
M03	Soil and Water Environment	2	2			
M04	International Rural Development	2	2			
M05	Advanced Technology in Agriculture	2			2	
M06	Food Science and Food Systems	2			2	
M07	Special Lecture on International Development I	1			1	
M08	Special Lecture on International Development II	1			1	
	(Subtotal)	(10)				
S01	Applied Genetics and Pest Management	2		2		
S02	Plant Resources	2		2		
S03	Bioscience and Biotechnology	2		2		
S04	Animal and Marine Bioresource Science	2		2		
S05	Agricultural and Resource Economics	2		2		
S06	Bioproduction and Environmental Science	2		2		
S07	Forest and Forest Production Science	2		2		
S08	Genetic Resource Technology	2		2		
	(Subtotal)	(2)				
	Total	30				

* The C, M, and S in the code denote as, C: Compulsory subjects = 5 subjects (18 credit in total); M: Module subjects = 5 subjects (10 credit required) selected from a total of 8; and S: Specialized subjects = compulsory and particular to each department (2 credit units).

** F = Fall semester; S = Spring semester

Table 2. Outline of the Master's course subjects

	Aim	Lecture methods	Choice	Professors	Required
Compulsory subjects	Research practice	Conventional form	5 subjects	Laboratory Prof.	5 (18 credits)
Module subjects	Improvement of basic academic abilities focusing on agricultural administration and rural development	Block module	8 subjects	Special team	5 (10 credits)
	Cross-cutting or interdisciplinary research				
Specialized subjects	Improvement of expertise	Block module	8 subjects	Your Depts.	1 (2 credits)

Table 3. Description of the Module Subjects

Code	Subject	Specification	Relevant Departments
M01	Fundamentals of Agricultural Sciences	Fundamentals of Agriculture and rural development (Biostatistics, etc.)	All
M02	Biological Resources: Utilization and Conservation	Fundamental sciences necessary for maintaining biodiversity and sustainable utilization of biological resources	Applied Genetics and Pest Management, Plant Resources, Animal and Marine Bioresource Science, Forest and Forest Products Science.
M03	Soil and Water Environments in Agriculture	Irrigation, drainage, reclamation engineering, and the control of water resources	Plant Resources, Agricultural and Resource Economics, Bioproduction Environmental Science, Forest and Forest Products Science.
M04	International Rural Development	Fundamentals and practical research on international rural development	Plant Resources, Agricultural and Resource Economics, Bioproduction Environmental Science, Forest and Forest Products Science.
M05	Advanced Technology in Agriculture	Agricultural life sciences and biotechnology	Applied Genetics and Pest Management, Bioscience and Biotechnology, Animal and Marine Bioresource Science, Genetic Resources Technology.
M06	Food Safety and Security	Science, technology and economics related to food safety and security	Bioscience and Biotechnology, Agricultural and Resource Economics, Bioproduction Environmental Science.
M07	Special Lecture on International Development I	Special lecture (Technical communication, etc.)	Adjunct professors
M08	Special Lecture on International Development II	Special lecture (Wide-ranging issues related to international development strategies, etc.)	Adjunct professors

9. Acknowledgement

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