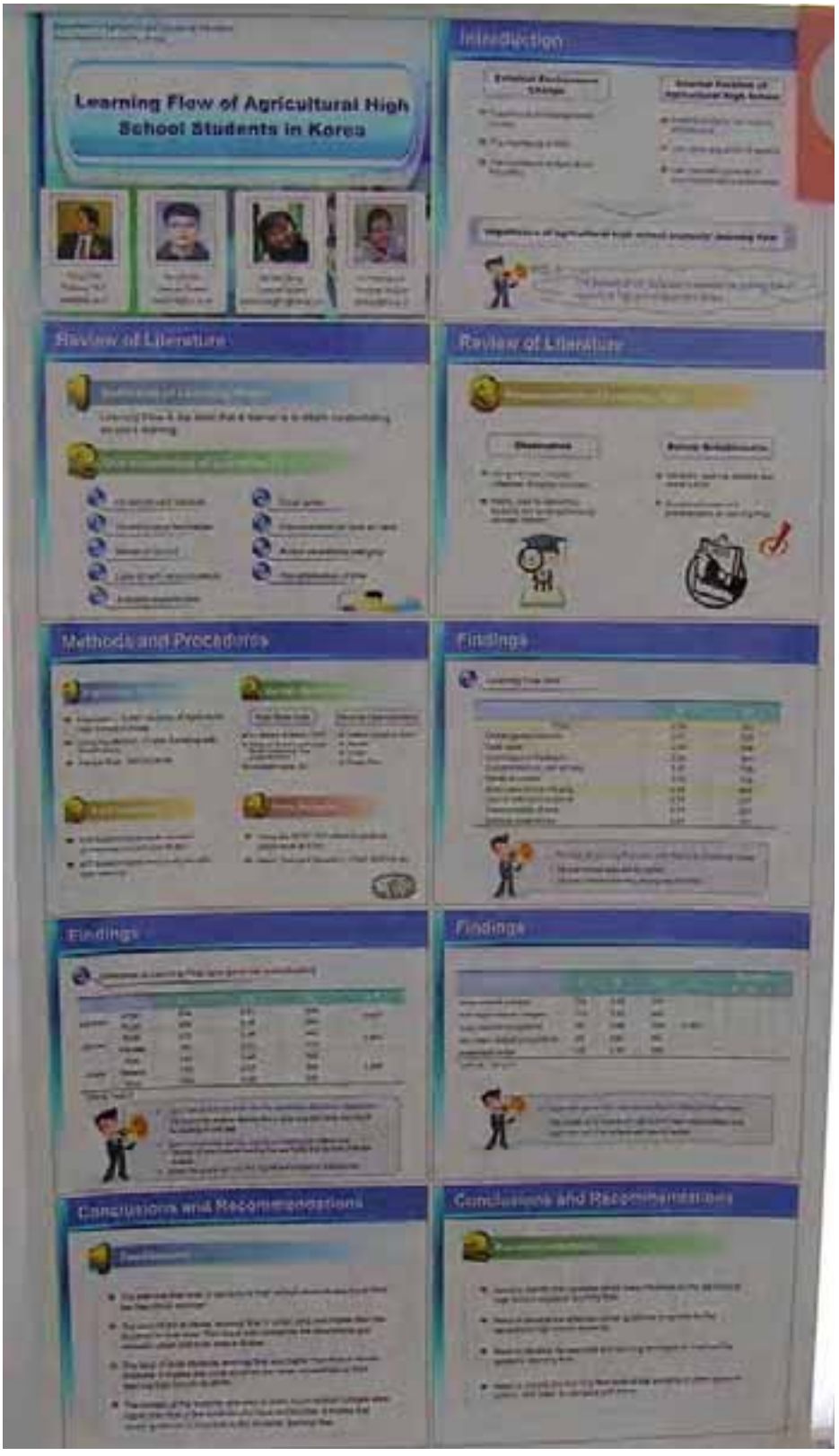
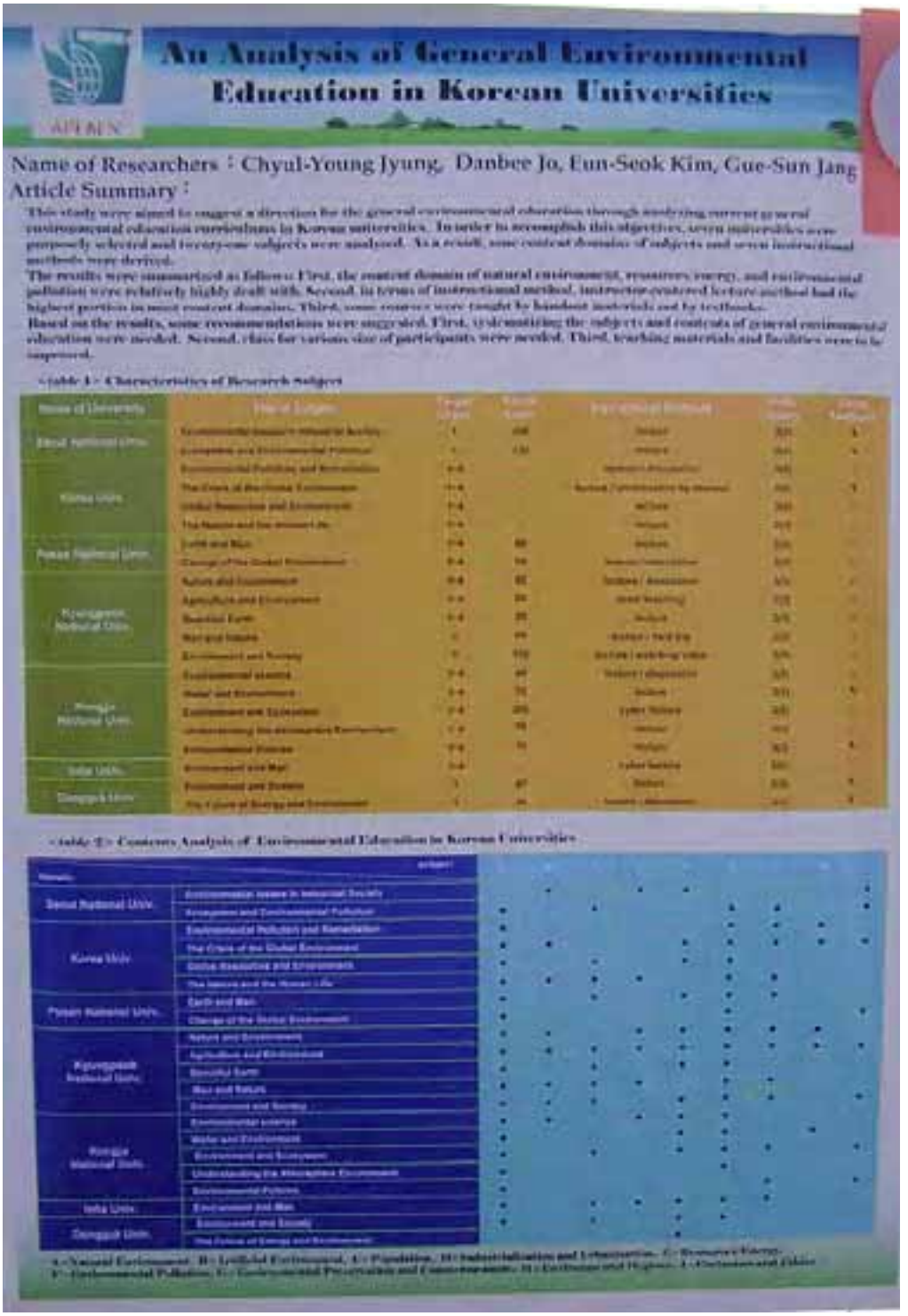
Posters


Learning Flow of Agricultural High School Students in Korea
Introduction
Review of Literature
Review of Literature
Methods and Procedures
Findings
Findings
Findings
Conclusions and Recommendations
Conclusions and Recommendations



An Analysis of General Environmental Education in Korean Universities

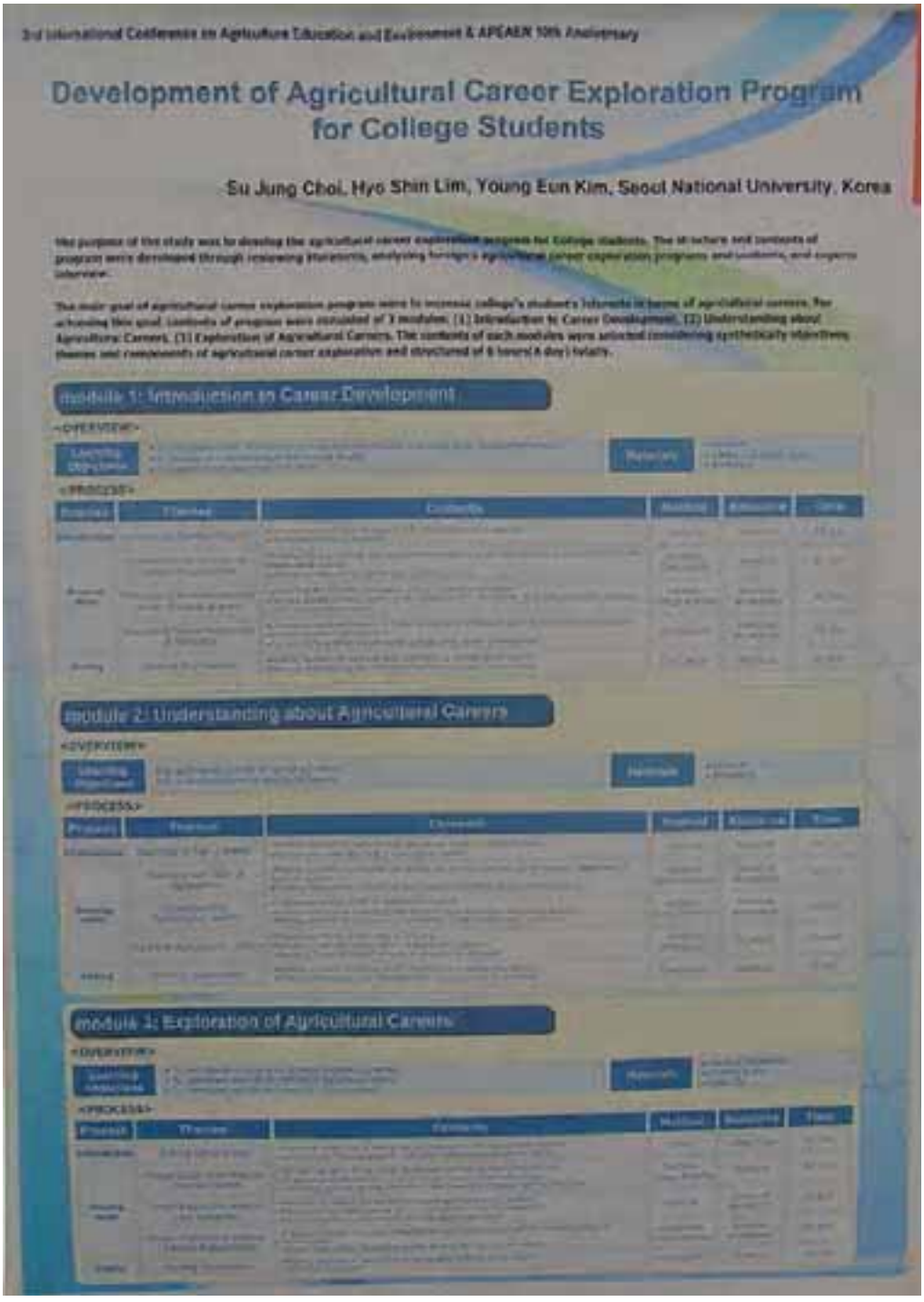
Name of Researchers : Chyul-Young Jyung, Danbee Jo, Eun-Seok Kim, Gue-Sun Jang

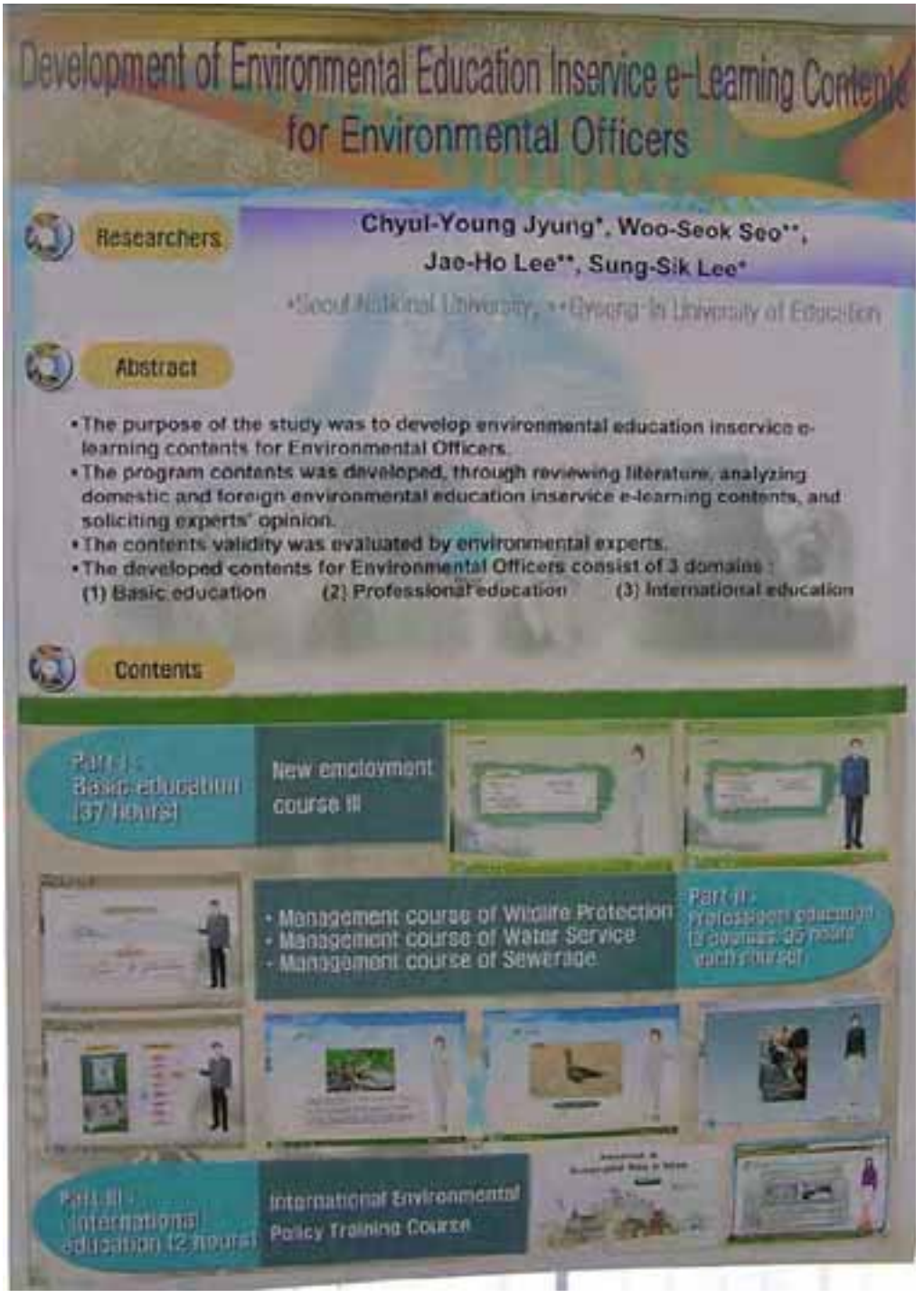
Article Summary :

This study were aimed to suggest a direction for the general environmental education through analyzing current general environmental education curriculums in Korean universities. In order to accomplish this objectives, seven universities were purposely selected and twenty-one subjects were analyzed. As a result, nine content domains of subjects and seven instructional methods were derived.

The results were summarized as follows: First, the content domain of natural environment, resources, energy, and environmental pollution were relatively highly dealt with. Second, in terms of instructional method, instructor-centered lecture method had the highest portion in most content domains. Third, some courses were taught by handout materials not by textbooks.

Based on the results, some recommendations were suggested. First, systematizing the subjects and contents of general environmental education were needed. Second, class for various size of participants were needed. Third, teaching materials and facilities were to be improved.


3rd International Conference on Agriculture Education and Environment & APEAEN 10th Anniversary
Development of Agricultural Career Exploration Program for College Students
Su Jung Choi, Hye Shin Lim, Young Eun Kim, Seoul National University, Korea
module 1: Introduction on Career Development
module 2: Understanding about Agricultural Careers
module 3: Exploration of Agricultural Careers


Development of Environmental Education Inservice e-Learning Contents for Environmental Officers
Researchers
Chyul-Young Jyung*, Woo-Seok Seo**,
Jae-Ho Lee**, Sung-Sik Lee*
*Seoul National University, **Gyeong-In University of Education
Abstract
•The purpose of the study was to develop environmental education inservice e-learning contents for Environmental Officers.
•The program contents was developed, through reviewing literature, analyzing domestic and foreign environmental education inservice e-learning contents, and soliciting experts' opinion.
•The contents validity was evaluated by environmental experts.
•The developed contents for Environmental Officers consist of 3 domains :
(1) Basic education (2) Professional education (3) International education
Contents
Part I : Basic education (37 hours)
New employment course III
• Management course of Wildlife Protection
• Management course of Water Service
• Management course of Sewerage
Part II : Professional education (3 courses, 35 hours each course)
Part III : International education (2 hours)
International Environmental Policy Training Course

Title : Environmental Education e-Learning Contents Development for the Elementary School Students

Name of Author(s)/Researcher(s) : Jae-Ho Lee, Woo-Seok Seo, kyoung-Soon Do, Jung-Eun Kim
Gyeong-In University of Education

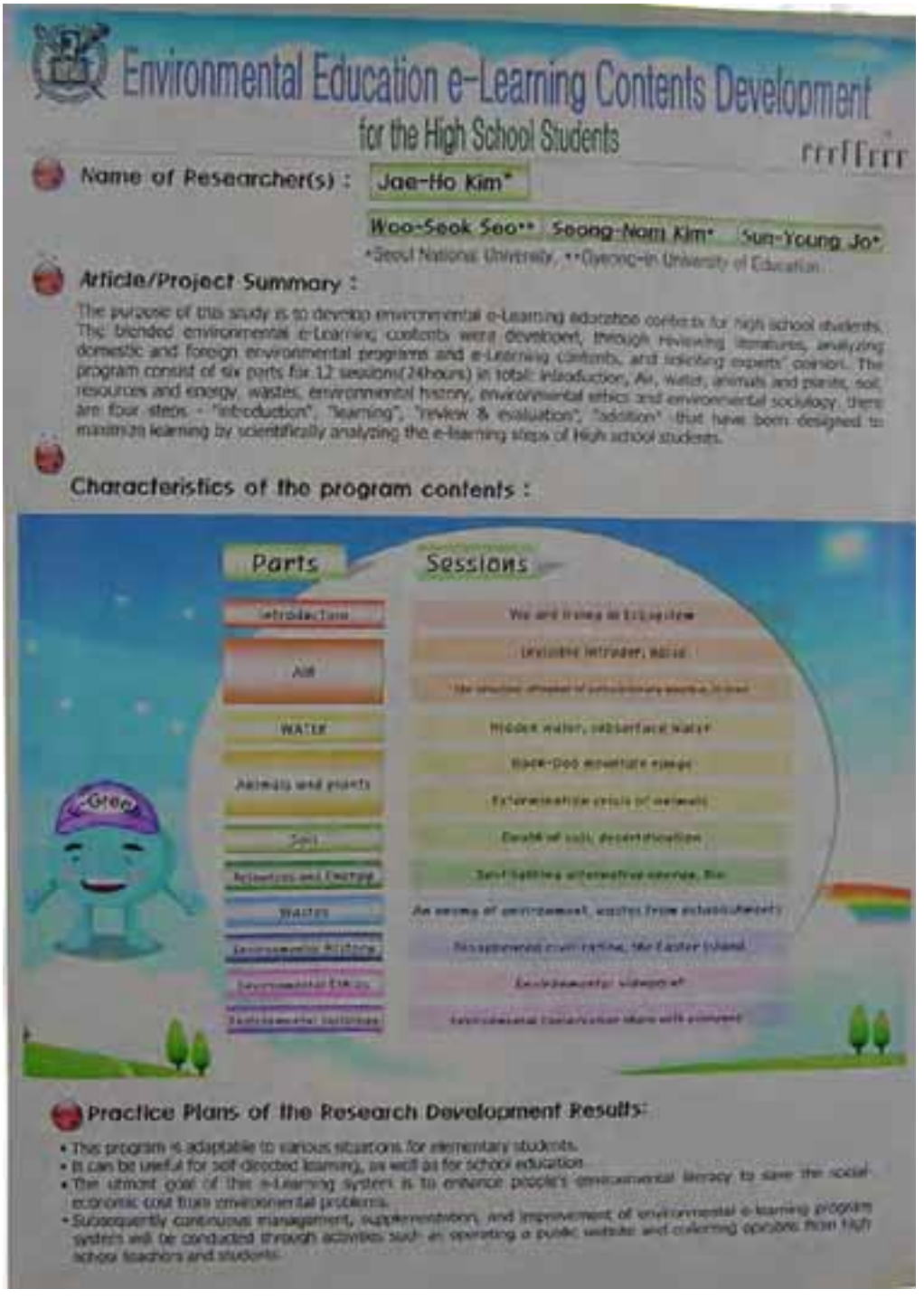
The purpose of the study was to develop environmental e-Learning education contents for elementary school students. The blended environmental e-Learning contents were developed, through reviewing literatures, analyzing domestic and foreign environmental programs and e-Learning contents, and soliciting experts' opinion

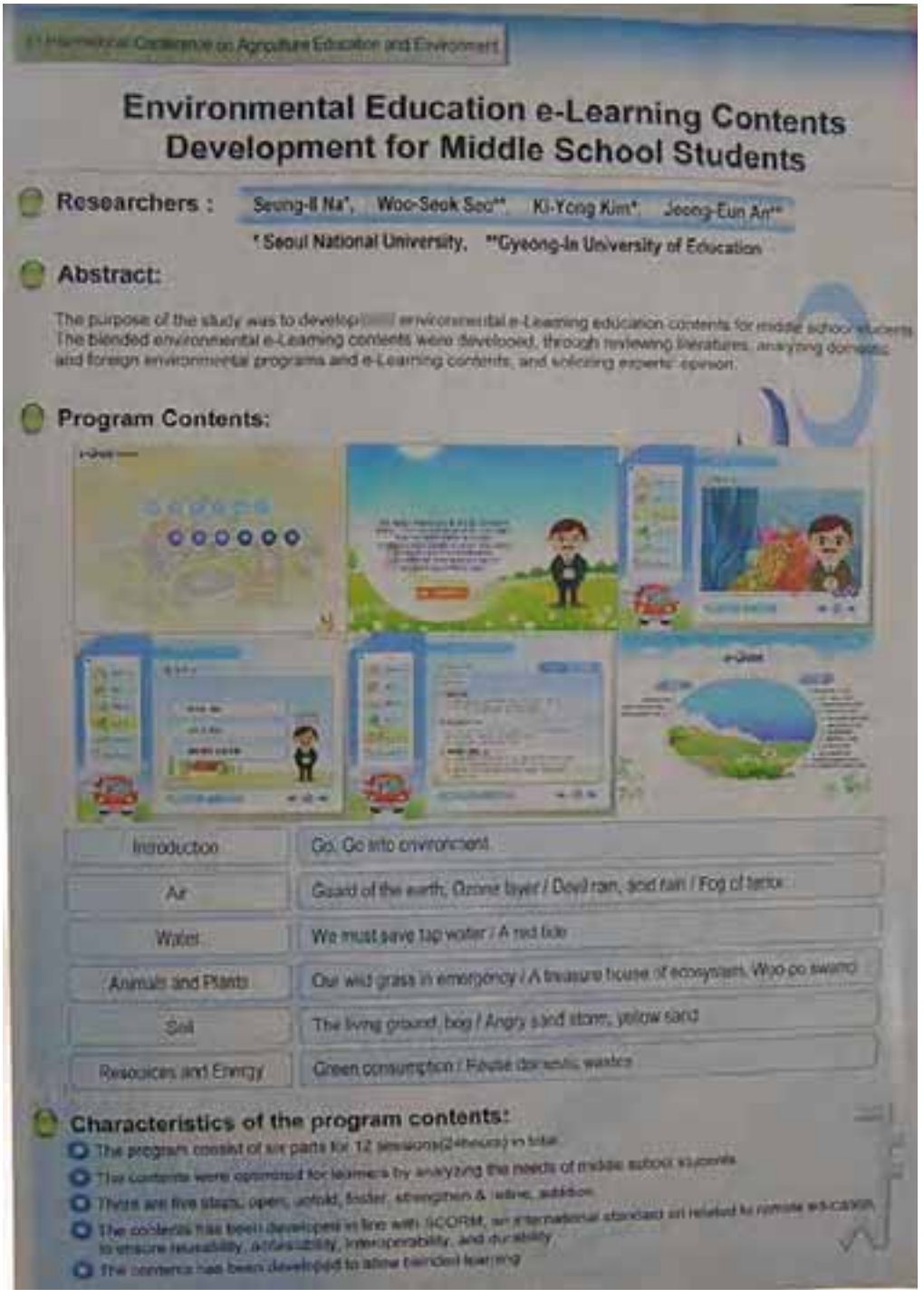
<Contents: 12 session>

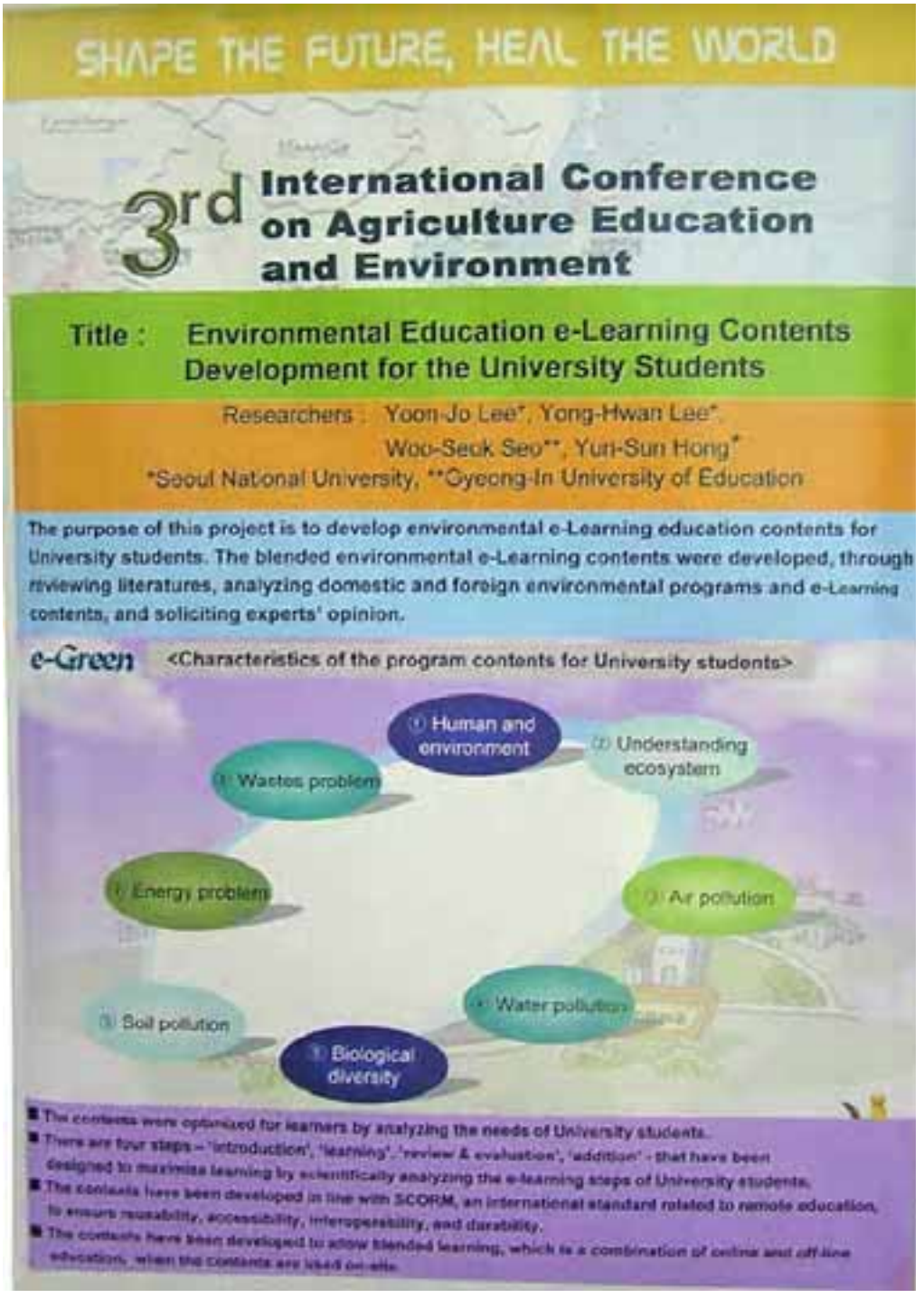
① Clear and green stars(Introduction)
② The earth is in a sweat(Air)
③ Water is running short!(Water)
④ The invitation of forests(Animals and Plants)
⑤ The underground exploration of Byu-Ree(Soil)
⑥ The journey of fossil energy(Resources and Energy)
⑦ Bupury's indoor exploration(Air)
⑧ The journey of A'rum(Water)
⑨ The story of wild flowers(Animals and Plants)
⑩ Lawsuit of migratory birds(Animals and Plants)
⑪ The story of Jee-Dol-I(Soil)
⑫ Rational energy-saving (Resources and Energy)

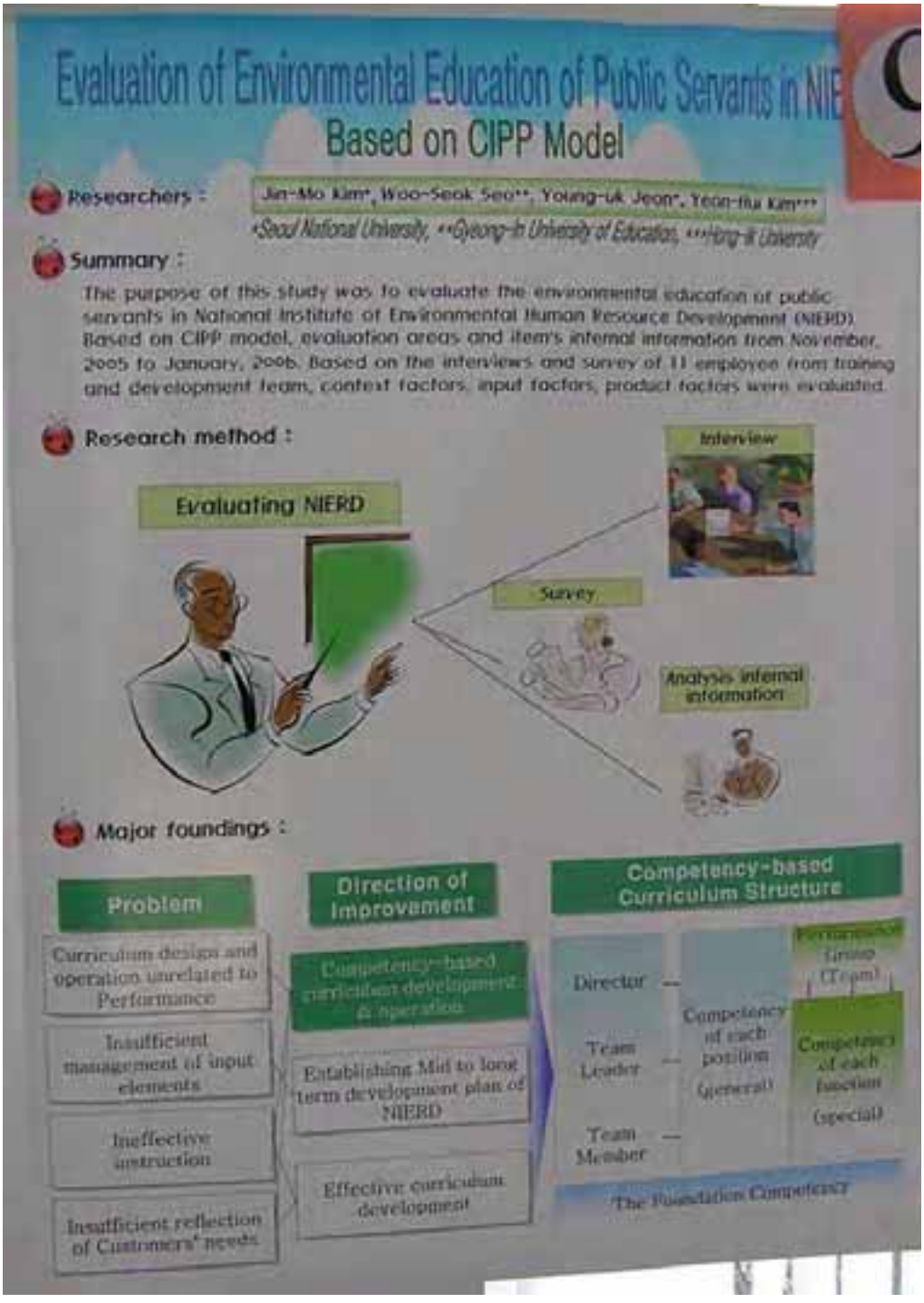
<Characteristics of the program contents>

- The contents were optimized for learners by analyzing the needs of elementary school students.
- There are four steps - "introduction", "learning", "review & evaluation", "addition"- that have been designed to maximize learning by scientifically analyzing the e-learning steps of University students.
- The contents have been developed in line with SCORM, an international standard on related to remote education, to ensure reusability, accessibility, interoperability, and durability.
- The contents have been developed to allow blended learning, which is a combination of online and off-line education, when the contents are used on-site.


Environmental Education e-Learning Contents Development
for the High School Students
Name of Researcher(s) :
Jae-Ho Kim*
Woo-Seok Seo** Seong-Nam Kim* Sun-Young Jo*
*Seoul National University, **Gyeong-in University of Education
Article/Project Summary :
The purpose of this study is to develop environmental e-Learning education contents for high school students. The blended environmental e-Learning contents were developed, through reviewing literatures, analyzing domestic and foreign environmental programs and e-Learning contents, and soliciting experts' opinion. The program consist of six parts for 12 sessions(24hours) in total: introduction, Air, water, animals and plants, soil, resources and energy, wastes, environmental history, environmental ethics and environmental sociology. there are four steps - "introduction", "learning", "review & evaluation", "addition" - that have been designed to maximize learning by scientifically analyzing the e-learning steps of High school students.
Characteristics of the program contents :
Parts
Sessions
Introduction
Air
WATER
Animals and plants
Soil
Resources and Energy
Wastes
Environmental History
Environmental Ethics
Environmental Sociology
Practice Plans of the Research Development Results:
• This program is adaptable to various situations for elementary students.
• It can be useful for self directed learning, as well as for school education.
• The utmost goal of the e-Learning system is to enhance people's environmental literacy to save the social-economic cost from environmental problems.
• Subsequently continuous management, supplementation, and improvement of environmental e-learning program system will be conducted through activities such as operating a public website and collecting opinions from high school teachers and students.


Environmental Education e-Learning Contents Development for Middle School Students
Researchers :
Seung-Il Na*, Woo-Seok Seo**, Ki-Yong Kim*, Jeong-Eun An**
*Seoul National University, **Gyeong-In University of Education
Abstract:
Program Contents:
Introduction
Go, Go into environment
Air
Guard of the earth, Ozone layer / Devil rain, acid rain / Fog of terror
Water
We must save tap water / A red tide
Animals and Plants
Our wild grass in emergency / A treasure house of ecosystem, Wijo-po swamp
Soil
The living ground, bog / Angry sand storm, yellow sand
Resources and Energy
Green consumption / Recycle domestic wastes
Characteristics of the program contents:


SHAPE THE FUTURE, HEAL THE WORLD
3rd International Conference on Agriculture Education and Environment
Title : Environmental Education e-Learning Contents Development for the University Students
Researchers : Yoon-Jo Lee*, Yong-Hwan Lee*, Woo-Seok Seo**, Yun-Sun Hong*
*Seoul National University, **Gyeong-In University of Education
The purpose of this project is to develop environmental e-Learning education contents for University students. The blended environmental e-Learning contents were developed, through reviewing literatures, analyzing domestic and foreign environmental programs and e-Learning contents, and soliciting experts' opinion.
e-Green
<Characteristics of the program contents for University students>
① Human and environment
② Understanding ecosystem
③ Wastes problem
④ Energy problem
⑤ Air pollution
⑥ Water pollution
⑦ Soil pollution
⑧ Biological diversity
The contents were optimized for learners by analyzing the needs of University students.
There are four steps – 'introduction', 'learning', 'review & evaluation', 'addition' - that have been designed to maximize learning by scientifically analyzing the e-learning steps of University students.
The contents here been developed in line with SCORM, an international standard related to remote education, to ensure reusability, accessibility, interoperability, and durability.
The contents have been developed to allow blended learning, which is a combination of online and off-line education, when the contents are used on-site.


Evaluation of Environmental Education of Public Servants in NIE
Based on CIPP Model
Researchers :
Jin-Mo Kim*, Woo-Seok Seo**, Young-uk Jeon*, Yeon-Ihu Kim***
*Seoul National University, **Gyeong-in University of Education, ***Hong-ik University
Summary :
The purpose of this study was to evaluate the environmental education of public servants in National Institute of Environmental Human Resource Development (NIERD). Based on CIPP model, evaluation areas and item's internal information from November, 2005 to January, 2006. Based on the interviews and survey of 11 employee from training and development team, context factors, input factors, product factors were evaluated.
Research method :
Evaluating NIERD
Interview
Survey
Analysis internal information
Major foundings :
Problem
Curriculum design and operation unrelated to Performance
Insufficient management of input elements
Ineffective instruction
Insufficient reflection of Customers' needs
Direction of Improvement
Competency-based curriculum development & operation
Establishing Mid to long term development plan of NIERD
Effective curriculum development
Competency-based Curriculum Structure
Director
Team Leader
Team Member
Competency of each position (general)
Competency of each function (special)
The Foundation Competency

Appendices

Program of Activities

November 4 (Sunday)

8:00 – 4:00	Participants' Arrival (to check -in at the PCC Hostel)
4:01 – 5:00	Registration
5:01 – 7:00	Welcome Dinner (EMCEE: Dr. Cely Binoya)
	Hosted by Dr. Nestor Alvarez City Mayor, Science City of Muñoz
	Feature: "The Inconvenient Truth"
7:30	APEAEN Board Meeting

November 5 (Monday)

8:00 – 9:00	Registration
9:01 - 11:00	

Opening Program

3rd International Conference on Agriculture Education and Environment and APEAEN 10th Anniversary

Venue: PCC Madamba / Castillo Hall

I.	Invocation	CLSU Choral Maestro Singers Prof. Florante Ibarra, Conducting
II.	The National Anthem	CLSU Choral Maestro Singers
III.	Opening Remarks	Dr. Yong-Hwan Lee President, APEAEN
IV.	Welcome Remarks	Dr. Ruben Sevilleja President Central Luzon State University
		Dr. Libertado Cruz Executive Director Philippine Carabao Center
		Dr. Nestor Alvarez City Mayor Science City of Muñoz

V.	Historical Perspective of APEAEN's Decade of Existence	Dr. Shigeo Tajima Founding President of APEAEN, 1997-2001
VI.	Special Number	The CLSU Maestro Singers Conductor: Prof. Florante Ibarra
VII.	Keynote Address	Hon. Joseph Gilbert Violago Congressman 2nd District Nueva Ecija
VIII.	Closing Remarks	Dr. Marylin Perlas Executive Director, APEAEN

Dr. Samuel T. Mancebo
Moderator
Chair, Organizing Committee
Board Member

11:00 – 12:00 Launching of Poster Presentation
(Participants will have a chance to interact with the presenters during their presentation. Judgment for the best poster will be made by the participants. Evaluation sheets will be submitted to the secretariat)

Submission of nomination for the Board of Directors
(observe constitutional qualifications)

LUNCH BREAK

Plenary Session I (Moderator: Dr. Marylin Perlas)

1:12 – 2:00 Topic: **"The Emerging Face of Rural and Urban Development to be Addressed by Higher Agricultural and Environment Education in Asia"**

Speaker: Dr. Charles Maguire
Former Sr. Institutional Development Specialist
World Bank, Washington DC, USA

Open Forum

Plenary Session II (Moderator: Dr. Hiroki Inaizumi)

2:30 – 3:15 Topic: **"Forms or Models of Higher Agriculture and Environment Education in Facing the Effects of Climate Change"**

Speaker: Dr. Martin Mulder
Professor in Agricultural Education
Wageningen University and Research Center
The Netherlands

Open Forum

Plenary Session III (Moderator: Dr. Sung Soo Kim)

3:45 – 4:30 Topic: **"Issues for Action of Green Productivity and Sustainable Agrivironment in an Era of Climate Change."**

Speaker: Dr. Catherine Castañeda
Director IV of Student Services, CHED

Open Forum

5:00 – 6:00 **BREAK**

6:00 – 8:00 Dinner Social (Venue: PCC Hostel)

Hosted by: Cong. Joseph Gilbert Violago
2nd District of Nueva Ecija

Featuring: The CLSU Maestro Singers
Conductor: Prof. Florante Ibara
CLSU Folk Dance / Serenade

EMCEE: Dr. Cely Binoya
Board Member

November 6 (Tuesday)

8:00 – 1:30 Idea-Vation Talk shops: Concurrent sessions
(Officer of the Day: Dr. Soon Su Kim)

Battad Room
Technology Sharing
(Moderators: Dr. Lily Bayabos & Ms. Yolanda Mendoza)

Joson Room
Sustainable Agriculture, Climate Change and Health
(Moderators: Dr. Jesusa Mancebo & Dr. Aurora Jose)

Campos Room
Education for Agriculture & Development
(Moderators: Dr. Masayoshi Arisawa & Dr. Maria Ana Quimbo)

Shahani Room
Education for Agriculture & Development
(Moderators: Dr. Carolina Santiliana & Ms. Evangeline Sulabo)

Note: Each group will submit issues & concerns for inclusion in the "Science City of Muñoz Declaration"

LUNCH BREAK

1:30 – 4:00 APEAEN Business Meeting (Pres. Yong-Hwan Lee)

Agenda:

- Election of Board of Trustees & Officers for 2007 – 2009
- Next 4th APEAEN Conference Venue
- Approval of 2008 – 2009 Budget
- Discussion Point: Is the APEAEN still relevant?
- Policy Actions/Follow-up: the Muñoz Declaration, (Amendments, Members, Website maintenance, future projects/involvements, Donations, etc.)

5:00

CLOSING PROGRAM

(Moderator: Dr. Marylin Perlas, APEAEN Exec. Director)

Opening Remarks	Dr. Charles Maguire
Guest Speaker	Dr. William Medrano Executive Director, CHED
Remarks of out-going president	Dr. Yong-Hwan Lee
Reading and Endorsement of the "Muòoz Declaration"	Dr. Samuel T. Mancebo
Oath Taking of New Officers, 2007 – 2009	Dr. William Medrano Executive Director, CHED
Oath Taking of New members, 2005-2007	Incoming President
Conference Paper and Poster Awards/ Other Certificates & Plaques.	Incoming Vice President
Closing of the Conference	Incoming President

7:00 DINNER

November 7 (Wednesday)

Field Trip (by arrangement) and Homeward Bound

A. Battad Room (8:00 A.M – 1:30 P.M.) (20 capacity)

TOPICS	AUTHOR/S	COUNTRY
I. Technology Sharing		
1. Providing IT Technical Advisory in BioSafety Education: Experience in Asia Pacific	Ruel Maningas	UNEP/Philippines
2. Investigation into Training of Farm Labourers in Free State Province (RSA)	Julius sebei, VM Mebengwa, LJ Botes, D Atkinson, KA Nephawe & A. Maiwashe	
3. Training of the New Farming System Corresponding to Conversion of Agricultural Administration	Hiroshi Satomi	Japan
4. Community – Based Research Approach	Avorn Opatpatanakit	Thailand
5. Change and Challenge in Korean Agricultural Extension	Dae Jin Ju, Jin-Mo Kim & Sung-Soo Kim	Korea
6. A Case Study of Local Wisdom on Agricultural Transmission of People in Nongpong Village, Dongyang Sub-District, Nandoon District, Mahasarakham Province, Thailand	P. Poungsuk & N. Pourpan	Thailand

B. Joson Training Hall (8:00 A.M. – 1:30 P.M.) (20 capacity)

TOPICS	AUTHOR/S	COUNTRY
II. Sustainable Agriculture, Climate Change and Environment		
1. Climate Variability and Drought Threats in Sind and Balochistan Provinces of Pakistan	S. H. Sajjad, M. Ahmed Khan & Asif Raza	Pakistan
2. Comparison of Carbon Benefits Between Natural and Plantation Forests	Raga-as, Melba L. & Rex Victor O. Cruz	Philippines
3. A Study and Conversation of Plant Diversity in Mangrove Forests at Pak Khong Bang Phra, Koh Chao and Koh Loi, Nong Khan Song District, Muang, Trat Province	Nongnuch Chanasit	Thailand

4. Agroecosystems Analysis for the Sustainable Development of Lake Buhi	Cely Binoya	Philippines
5. Development of Environmental Education Inservice e-Learning Contents for Elementary, Middle & High School Teachers.	Woo-Seok Seo, Chyul-Young Jyung & Jae-Ho Lee	Korea
6. The Cultivation and Processing of Haskap in Hokkaido, Northern Japan	Mitsuko Ukai	Japan
7. Organic Fertilizer Amelioration of a Mine-Tailed Area of Philex Mining Corporation Located at Salangan, Itogon, Benguet, Philippines	Jose G. Balaoing, Donna B. Betudio, Wayne D. Diwas, Docey Jane D. Hidalgo, Jocelyn A. Pontino & Yvonne C. Talawan	Philippines
8. Factor Analysis of Factors Network that Related to Adoption of Insurance by Wheat Farmers in Khouzestan Province, Iran.	Kiyanoush Ghalavand, Mohammad Chizari, Omid Noroozi, & Seyed Mehdi Mirdamadi	Iran

C. Campos Room (8:00 A.M. – 1:30 P.M) (20 capacity)

TOPICS	AUTHOR/S	COUNTRY
III-A. Education for Agriculture and Development		
1. International Student Summit (ISS): A Case of the International Activities in the Tokyo University of Agriculture	Hiroki Inaizumi	Japan
2. A High School that had Brought About "Affluence" to the Small Rural Community.	Shigeo Tajima and Tadakazu Kojima	Japan
3.Pursuit of Career in Agriculture: Preferences of the University of the Philippines Los Baños Agriculture Students	Frances Muriel L. Tuquero and Maria Ana T. Quimbo	Philippines
4. Carreer Development Issues of Undergraduate Environmental Education Program Students in South Korea	Y.H. Lee, S.Y. Ahn, An Yang & J.H. Kim	Korea

5. Introduction of a College Curriculum Track for Training Future Farmers Funded by Korean Ministry of Agriculture and Forestry: An Evaluation Framework and New Directions	Seung Il Na, Kang Ho Kim, Min Wook Lee & Hyun Jin Jang	Korea
6.Awareness on Halal Food Production: Insights from Selected Industry and Academe	Indihra B. Dimaporo and Ernesto I. Bumatay	Philippines
7. Improving the Reach of Higher Agricultural Education in Asia-Pacific: Some Lessons for Improving education for Rural People	Malcolm Hazelman	FAO

D. Shahani Room (8:00 A.M. – 1: 30 P.M.) (40 capacity)

TOPICS	AUTHOR/S	COUNTRY
III-B. Education for Agriculture and Development		
1. Agriculture Education for the Young Formative Learners to Enhance the Higher Agriculture Education Environment	Florie Gapido & Cleotildo De Asis	Philippines
2. Analysis of KOLB's Learning Style of Grade 12 Students at Photawattanasenee School, Ratchaburi Province, Thailand	Ratchadakorn Phonpakdee	Thailand
3. Effective Teaching Methods and Strategies for College of Agriculture & Life Science in Korea	Seoung-Il Na, Ki-Yong Kim & Se-Yeon Moon	Korea
4. Enhancement of Education in Farm and Food Industry with Adoption of Computer Based Information System	Z.Raftani Amiri	Iran
5. Mentoring and Entrepreneurship in School	Rhodelia Gabriel	Philippines
6. The National Agriculture Fishery Education System (NAFES): An Instrument of Agri-fishery Modernization or Mediocritization in an Environment of Climate Change?	Samuel T. Mancebo	Philippines
7. Where have all the graduates gone? The Case of 2000 to 2005 UPLB-BSA Graduates	Haydee Lasco and Samuel T. Mancebo	Philippines

POSTER PRESENTATION

TOPICS	AUTHOR/S	COUNTRY
1. Learning Flow of Agricultural High School Students in Korea	Seung-Il Na, Sang-Ki Min, Eun-Kyoung Lee & Zhang-Dawei	Korea
2. An Analysis of General Environmental Education in Korean Universities	Chyul-Young Jyung, Dan-Bee Jo, Gu-Sun Chang & Een-Suk Kim	Korea
3. Development of Agricultural Career Exploration Program for College Students	Chyul-Young Jyung, Su-Jung Choi, Hyo-Shin Lim & Young-Eun Kim	Korea
4. Development of Environmental Education Service e-Learning Contents for Environmental Officers.	Chyul-Young Jyung, Woo-Seok Seo & Jae-Ho Lee	Korea
5.Environmental Education e-Learning Contents Development for Elementary School Students	Jae-Ho Lee, Woo-Seok Seo, kyoung-Soon Do & Jung-Eun Kim	Korea
6. Environmental Education e-Learning Contents Development for the High School Students	Jae-Ho Kim? Woo-Seok Seo & Seoung-Nam Kim	Korea
7. Environmental Education e-Learning Contents Development for Middle School Students	Seung-Il Na? Woo-Seok Seo, Ki-Yong Kim & Jeong-Eun An	Korea
8. Environmental Education e-Learning Contents Development for the University Students	Yoon-Jo Lee, Yong-Hwan Lee & Woo-Seok Seo	Korea
9. Evaluation of Environmental Education of Public Servant in NIERP Based on CIPP Model.	Jin-Mo Kim? Woo-Seok Seo & Byeong-Kug Song	Korea

WORKING COMMITTEES

STEERING COMMITTEE

Honorary Chairman	Dr. Shigeo Tajima
Chair	Dr. Yong-Hwan Lee
Vice – Chair	Dr. Marylin Perlas

Members

1. Dr. Sung Soo Kim
2. Dr. Charles Maguire
3. Dr. Samuel Mancebo
4. Dr. Mohammad Hussein Emadi
5. Dr. Masayoshi Arisawa
6. Dr. Cely Binoya
7. Dr. Hiroshi Satomi
8. Dr. Hiroki Inaizumi
9. Dr. Malcolm Hazelman

CONVENING / ORGANIZING COMMITTEE

Chair	Dr. Samuel Mancebo	
Vice – Chair	Dr. Marylin Perlas	
Members	Prof. Frances Muriel Tuquero	Dr. Libertado Cruz
	Dr. Ruben Sevilleja	Engr. Jezreel Tuquero

SECRETARIAT

Chair	Dr. Carolina Santillana	
Members	Dr. Josefina Dizon	Dr. Rowena Baconguis
	Ms. Yolanda Mendoza	Ms. Francis Tan
	Dr. Jesusa Mancebo	Dr. Edwin Puhagan
	Ms. Vangie Sulabo	

PROGRAMME AND DOCUMENTATION

Chair	Dr. Maria Ana Quimbo	
Members	Prof. Frances Muriel Tuquero	Dr. Rhodelia Gabriel
	Dr. Lilia Bayabos	RFG Photography
	Engr. Jezreel Tuquero	

Business & Exhibits

Chair	Dr. Ruel Maningas
Members	Ms. Indihra Dimaporo
	Dr. Aurora Jose

Transportation & Accommodation:

Chair	Ms. Zenaida Tan
Members	Ms. Loma Domingo
	Mr. Danilo Reforma
	PCC Hostel Management

Field Visit Committee

Chair	Ms. Julie Burnot
Members	CLSU PAO Staff

Security Committee:

Chair	Dr. Emanuel Sicat
Members	CLSU Security Personnel
	PCC Security Staff

Opening Remarks

Dr. Yong Hwan Lee
President
APEAEN

Honorable Dr. Tajima the founding president of APEAEN; Dr. Charles Maguire and Dr. Martin Mulder, Dr. Catherine Castañeda, Dr. Ruben Sevilleja, the President of Central Luzon State University and Dr. Libertado Cruz, Executive Director of the Philippine Carabao Center, distinguished guests, ladies and gentlemen, good morning.

It is my great pleasure to hold the International Conference on Agriculture Education and Environment and APEAEN 10th Anniversary in the Philippine Carabao Center, Department of Agriculture, Science City of Muñoz. I would like to express my deep appreciation to FAO, APO, Society of Korean Agricultural Education,SEARCA, Development Academy of the Philippines – National Productivity Organization, Philippine Carabao Center – Department of Agriculture, UPLB- College of Public Affairs – Institute of Community Education, and Commission on Higher Education. Their help and support made possible the conference to be held here today. As a matter of fact, the 3rd Conference had been planned to be held last year in Iran. But we cannot hold it there. I am so glad to hold the conference here in the Philippines.

APEAEN was established on August 5, 1997 during the APO sponsored Symposium on Agricultural Education Systems in Asia and the Pacific held at Diamond Hotel in Tokyo, Japan. We held the first international conference in IRRI in Los Baños, Philippines and the second international conference in Korea. Now, we are holding the third international conference here at the Philippine Carabao Center, Central Luzon State University. The conference theme is "Preparing for the Future: Rethinking Higher Agriculture Education and Environment in the Asia Pacific." As we all know, there is rapid change in the world's concept about the role of agriculture in maintaining natural resources. Agriculture as a dominant segment of the economy needs to be reviewed. It has to be explored to find a new way for agriculture to contribute to the national and global development. I hope the conference will be a good opportunity for us to discuss the theme and to find a link for international cooperation. I would like to express my deepest appreciation to Dr. Mancebo and Dr. Perlas, who have put the best effort to hold the conference successfully. I would also like to express my gratitude to all who have helped and supported us. I hope you can support the organization also in the years to come. Thank you so much.

Welcome Remarks

Dr. Ruben Sevilleja
President
Central Luzon State University

Thank you very much Dr. Mancebo. Dr. Yong Hwan Lee, the President of APEAEN, Dr. Shigeo Tajima, the Founding President, Dr. Mancebo, the Chair of the Organizing Committee and Board Member of APEAEN, Dr. Libertado Cruz, the Executive Director of the Philiipine Carabao Center, Executive Director, Dr. Marylin Perlas, distinguished resource persons, delegates to this very important conference, ladies and gentlemen, good morning.

First of all, on behalf of the administration officials, the faculty members and non- academic personnel including our students of the Central Luzon State University, I wish to extend to you all a warm welcome to our campus, to the Science City of Muñoz, the province of Nueva Ecija and to the Philippines in general. To our foreign guests who are visiting the country for the first time, warm welcome to you all.

When Dr. Mancebo asked CLSU to be a co-sponsor of this International Conference, I readily agreed. Because the goals and objectives of your association are very much consistent with the mission, goals and objectives of our university. Now, please allow me to say a few words about the Central Luzon State University. You know we have just celebrated our centenary last April this year. So, we are now 100 years old as an institution of higher learning. We started actually as a humble farm school in 1907. That school was established by the Americans. It was initially intended to train young men to be involved actually in agriculture. This area then was a virgin area so those American educators thought it to provide the necessary skills and expertise for the natives in the area to develop this land because of the big big potentials in agriculture that can be derived from this very important resource. This school then graduated to becoming an agricultural college in 1950 and became a university in 1964. Now, it has become a general comprehensive university, actually the only general and comprehensive university officially in the Central Luzon Region. While we have become such, offering courses in Social Sciences, in Business and Economics, the University has retained its stature as a leading agricultural university and it has retained its flagship programs in agriculture and other agriculture-related courses like veterinary medicine, fisheries, agri-management and others. The major contribution of our University to higher education in the Philippines is that it pioneered in the offering of agricultural higher education. During the early days of the then Central Luzon Agricultural

College, the institution was known for its work-oriented curriculum in agriculture and it implemented a very very important teacher training program in agricultural education. This is the very reason why now the University still maintains its agriculture and agri-based programs. It considers agriculture as a very important sector in our society and in our economy. That is why the theme chosen for this conference "Preparing for the Future: Rethinking Higher Agriculture Education and Environment in the Asia Pacific." Indeed is very very relevant and very very timely for the information of our foreign guests and participants. Universities especially state colleges and universities offering agriculture program in the Philippines are sort of under threat and under pressure because of the increasing proliferation of other non-agriculture-based curricular programs which offer graduates opportunities to work abroad unfortunately. Although we are very confident of the stature of our agriculture programs here at the University because over the years we haven't experienced any significant decline in our enrolment. But still in general, there seems to be a decline in the interest of agriculture and related fields in our higher educational institutions. I believe that this is the area where agriculture should actually be given importance and prominence in the academe and in higher educational institutions the link with the environment since we are aware of the threat of deterioration of the environment wherever we are or whatever country we live in. For this reason we really need to educate our people, provide them with the necessary information and skills so we may arrest the decline of our environment. I believe that your conference and theme that has been adapted is indeed very very timely and I am certain that your participation in this conference is a manifestation of your concern and of your desire to make the environment and the world a better place to live in especially for future generations to come. Again, on behalf of the Central Luzon State University I extend our warm welcome to you all. I hope that your short stay with us will be a very fruitful, educational and enjoyable one. We invite you and encourage to please find time to look around the Center and in our Campus which is just across. Actually the Philippine Carabao Center is within the reservation of the University and we hope that you can have some nice memories and experiences out of your stay in CLSU in the Science City of Muñoz, in our province and in our country. Thank you very much and good morning.

Welcome Remarks

Dr. Libertado Cruz
Executive Director
Philippine Carabao Center

Thank you very much Dr. Mancebo. Our founding president Dr. Tajima, whose son is my good friend from Tsukuba University, and of course the president President Lee, executive director Marylin Perlas, our distinguished guests and participants, a pleasant morning to all of you.

Few months ago, when you visit this place you will see green in all the areas in here, because it was planting season. Today, in this particular occasion of your conference, you will probably see the surroundings in color gold because it is the time of harvests. But in the years that passed when the harvest season was on, we did not have rains so we could harvest rice and be able to dry it so the farmers used to get more income. Today, we harvest rice with much rains. Environment actually is changing and so how do we deal with this? To me, it is very interesting in the point of view of the theme of the congress. But, let me welcome you first to the Philippine Carabao Center. A warm welcome to everybody and it's our pleasure to have you here. Actually we are very privileged and honored by your choice of the PCC to be the venue of your international conference today and for the rest of the period. Briefly, I would like to say that the Center is maybe as young as your organization, maybe two or three years older than the APEAEN. We were organized and became operational in 1993 and our objective actually is to help the rural farming families increase their income, improve nutrition using the water buffalo or the carabao as a medium for development because above three million of our poor farming families, own at least one or two animals and we would like to transform these animals from becoming just a mere draft animal. Our farmers rely mostly on small hold agriculture and the question is how do we increase income of these people who rely on one hectare of rice or a hectare of coconut or a hectare of corn land when they have the carabao used for work? So, we are now transforming this carabao because of the presence of farm mechanization which are replacing them. We are transforming these animals to becoming the more important source of milk and meat. Because 99% of our milk in the Philippines, worth about 450M USD, is imported from either Australia or New Zealand. So we always ask the question as to why do we have to pay Australian and New Zealand farmers for our people to get the milk when we can have our people produce our own milk? The Center now is trying to transform these more than three million water buffaloes to become sources of milk and secondarily, as sources of meat. But, educating our farmers and educating the majority of the communities, and the transformation I think of agriculture particularly in this part of Asia where development is fast and the population is growing also as fast is the big challenge. There seems to be a need for a conference like this because of the changing ways of agriculture and its impact on environment. For example, we just had a world congress on water buffalo in Italy a week ago and we tried to look into the impact of development in

Asia. There seems to be a very distinct picture of the population growing so fast; of an increasing urbanization and the effect is that there is also an increasing change in the food preferences. The urbanized people are increasing demand for meat and milk but this increases in demand is met by commercialization of livestock production particularly in the very urban areas. There is massive production of hogs, massive production of poultry to be able to meet the growing demand for meat and milk. But ultimately this commercialized production that would meet the requirements of the growing urbanized population is affecting so much the environment. It is creating so much pollution and there therefore seems to be twin issues on the need to produce more food and yet at the same time, also address the deteriorating environment. So when I saw the very objective of the conference of exchanging information of sharing knowledge and redirecting on where we as educators would bring our future generations, I found it very timely. I am very glad not only because you make the PCC as the host but I am very glad because you bring forth to the very front of us the very issues that confronts the whole of Asia. We are very glad as well because we have some key speakers present today and maybe in the coming days whose experiences and I think insights are broad enough to be able to inflict and contribute significantly to the redirection of education not only in the Philippines but also in most of Asia. So, I congratulate the organizer of this conference and I am very glad that we will have the opportunity also to learn from you. Please feel free to move around. As the Mexicans always say my home is your home. The PCC is your home. We welcome you all and congratulations. Good morning to you all.

Historical Perspective of APEAEN
Decade of Existence (As of Oct. 2007)

Dr. Shigeo Tajima
Prof. Emeritus,
Obihiro University, Japan
& Founding President of the APEAEN

Honorary Guests, Colleagues, Friends, Ladies and Gentlemen.

It is a greatest honor and an utmost pleasure to be given a chance to talk on Historical Perspective of the APEAEN on the occasion of Ten Years Anniversary of founding the organization.

Taking this opportunity, I would like to speak on four items, namely

1. Two basic concepts leading to the organization of the APEAEN,
2. Processes of formulating the APEAEN,
3. Major developments of the APEAEN activities,
4. Meeting problems of the APEAEN.

1. Two basic concepts leading to the organization of the APEAEN .

There were two basic concepts which led to the organization of the APEAEN. First was a new concept developed based on the serious reflection on conventional types of study meetings and seminars, which I myself was involved for more than 50 times, under the name of the Team Leader of the UNESCO Mobile Mission for Teacher Training, or under the title of the Chief Consultant for Study Meetings (Seminars) of Asian Productivity Organization (APO), or as the organizer of the Seminar of UNESCO Asian Program of Educational Innovations for Development (APEID) which were implemented at the Obihiro University of Agriculture and Veterinary Medicine.

My reflection started from the question whether those study meetings or seminars were really effective for a great majority of participants from developing countries in Asia and the Pacific. Even though themes of the study meetings were decided mostly by the sponsoring organization in consultation with the delegates from the member states, guest speakers were mostly invited from developed world who would speak on new ideas, approaches, or new methodologies which had brought about successful achievements in the developed world with had little to do in meeting the problems of the environment of each participant. The efforts of speakers and diligence of the participants to learn from the lectures given in the study meeting (or seminar) were not always effective as expected. Besides, participants were just listeners or recipients of the lectures in most cases.

The new concept was somewhat different from the conventional approaches insisting that in order to cover the weak points of conventional approaches, it would be necessary to organize a kind of association consisting of individuals who have problem-oriented minds as well as self-initiated action-oriented philosophy for problem solving. Further, in order to keep the organization always progressive and lively, it would be necessary to have a chance to meet these individuals once in a while so that each member may obtain stimulation, encouragement, and learn new ideas and methods through an exchange of experiences or opinions, just like this biannual conference we are holding today.

Second was a bit more philosophical idea that was developed among specialists on Civilization (culture). According to them, the progress of culture or civilization will be made at the time (or place) when and where different cultures or civilization meet, or different0nationality with different cultural backgrounds (religion, cultural heritage, language, etc.) meet. If this is true, we need to consider more frequent meetings so that we may have more substantial progress in our culture through the exchange of experiences and information originating from different countries, race, religion, and cultures.

In addition to the above two concepts, the following statement made by the late Director0General of the United Nations Mr. Dag Hammarskjold encouraged us so much. He said:

> *"Fundamentally man is the key to our problems, not money. Funds are valuable only when used by trained, experienced, and devoted men and women. Such people, on the other hand, can work miracles even with small resources and draw wealth.*

2. Processes of formulating the APEAEN .

1) The AEAEN was born August 5, 1997 during the APO Symposium on Agricultural Education Systems in Asia and the Pacific held in Tokyo, Japan. Sixteen participants from 15 countries in Asia and the Pacific Region forged alliance of educators in agriculture and environment. This is the third attempt to realize the birth of an organized body to address itself on the development, improvement and professionalization of agriculture and environmental educators.

2) Then in the process of preparing the organization, the major nature and characteristics of the APEAEN became gradually clarified and determined:

APEAEN was organized as *a non-stock, non-partisan, non-government, international0organization of educators, researchers, extension workers, administrators, policy-makers,0practitioners, development workers / specialists* and *institutions* involved in education in agriculture and

environment. This is one of the symbolic regulations that the APEAEN is aiming at adopting a holistic approach to the complex problems and concerns like rural development.

3. Major developments in the past ten years.

1) Biannual conference

The 1st Conference in the Philippines in 2002
Theme: Searching New Models of Agriculture Education in a Disturbed Environment
Guest Speakers: A total of 8 (FAO-1, Phil.-5 U.S.A.-1, and Sri Lanka- 1)
Number of papers presented: 17(Phil.-12, K- 2, J.-3)
Numbers of participants: 157

The 2nd Conference in Korea in 2006.
Theme: Best Practices in Poverty Alleviation through Education for the New Century
Guest Speakers: 8 experts (FAO-2 USA-2 Netherlands-2 Germany 1,and Korea-1)
Number of papers and posters presented: 23 (Korea -13, Phil.-5, Jp.-4, and Iran-1)
Numbers of participants: 250

The 3rd Conference in the Philippines in 2007.
Theme: Preparing for the Future: Rethinking of Higher Agriculture Education and Environments
Guest speakers: 2 International experts (Netherlands-1, USA-1, and Phil.-1)
Number of papers and posters presented: 28 papers and 9 posters
Nos. of participants:120

2) Publications
FAO-APEAEN (2002): Report of the First Conference (337 pages),
FAO-APEAEN (2006): Report of the 2nd Conference (364 pages)
FAO-APEAEN (2003): Best Practices for Education and Training of Rural Youth (98 pages)

3) Newsletter: No.1 ~ No. 13

4. Meeting Problems of the APEAEN and its Solution

a. Discovery of new sponsoring organization
b. Increase in APEAEN member states and their members
c. Collaboration with similar organizations in other regions (U.S. A., Netherlands, etc.)

References

The Message from the President
Cited from APEAEN Newsletter No. 1, July 1999

Dear Colleagues and Friends,

It is with great pleasure to send herewith this first issue of the APEAEN Newsletter to you. With this opportunity, I would like to tackle two things: one is concerning the subject to be examined by the association, and two, the nature of the APEAEN.

The APEAEN is recognized as an association composed of members who are concerned with agriculture, in a broader sense. With this background, it is natural that the APEAEN Newsletter will contain topics or problems related to educational and training on agricultural production technologies, farm management, marketing, credit, agricultural policy, etc. This association has carried out studies on these subjects.

However, APEAEN has now included the new and popular issues and problems of environmentalism and sustainable use of resources. In other words, the APEAEN is now deeply concerned with the provision of appropriate knowledge and techniques on pollution and sustainability of the farmers' productivity.

Concerning the nature of APEAEN, I believe that it should be an association that is operated democratically by open-minded members who have the "We" consciousness. This means that members in the association may express freely their study results and experiences in any event or program that the APEAEN might organize and undertake.

The President Message delivered in the First Conference of the APEAN held at IRRI on 16th, October, 2002.

Taking this opportunity, I would like to talk on 3 points related to our organization.

The First is on the **historical background** of our organization. The APEAEN was born on August 5, 1997 in Tokyo during the Study Meeting on Agricultural Education System organized by the Asian Productivity Organization (APO). The participants of the study meeting totaled 16, representing 16 countries in the Asia-Pacific Region.

Incidentally during the session there was a proposal to create a region-wide professional Organization among educators in agriculture and environment. There were serious discussions on possibility / usefulness of the

organization, and, finally all the participants unanimously agreed to create it. All of them had recognized the necessity to have a kind of follow-up system that would enable them to exchange information and experiences.

The second is on the **characteristics** of the APEAEN. There are 4 major characteristics.

1. The fact that the APEAEN is a non-stock, non-partisan, non-governmental, international organization of educators, researchers, extension workers, administrators, and policy makers. Practitioners, development workers, specialists and institutions involved in education in agriculture and environment.
2. The function of the APEAEN to serve as an international alliance for the identification and dissemination of new developments and best practices in the field of agriculture and environmental education.
3. Another function of the APEAEN is to exchange technical and professional knowledge and information in improving, educational research, development and practice.
4. The relationship of the APEAEN with other organizations, that is, to cooperate, to coordinate and collaborate with local, national, regional, and international organizations, etc. in searching for new directions and solutions to problems.

The third aspect I would like to share is on **the future direction and possible activities** of the APEAEN. On this matter, I would like to draw your attention to the most impressive words on significance of education stated by the Late Dag Hammarskjold, the former U N Secretary General as: *Fundamentally man is the key to our problemsÿnot moneyÿFunds0are valuable only when used by trainedÿexperienced, and devoted men and womenÿSuch0people, on the other hand, can work miracles with small resources and draw wealth out of a barren land.* I think all educators must operate on this principle. This must also serve as a symbolic direction we should follow for operating the APEAEN.

I would also like to speak on the practical direction we should follow in proceeding education in agriculture and environment. For instance, what Dr. Hazelman, FAO Bangkok Office presented in the recent APO Study Meeting held in Tokyo was quite informative and practical. According to him, there are a total of 1.6 billion of young men in the world today. Out of them, 85% live in developing countries, and 60% live in Asia alone. They are meeting with various obstacles that block both their individual progress and their collective contribution. Without sufficient education and training, they have a little hope of employment and likely remain poor. Lacking information and experiences, they are meeting various kinds of hazards, including discrimination, crime, violence, alcohol and drug abuse, as well as sexually transmitted diseases and unwanted pregnancies.

Under such situation, appropriate actions should be taken on the following: 1) the need for strong national policies. 2) the need to provide more or adequate accesses, 3) the need to make curriculum relevant and easier to renew, 4) the need to improve teacher / trainer competencies; 5) the need to enhance availability of appropriate facilities and equipment, and 6) the need to identify resources, and allocate them as equal as possible.

Certainly, besides programs for rural youth, there is a definite need to provide adult farmers and farm women with appropriate knowledge and information through offering in-service training courses or using various kinds of communication media.

With regard to environmental education to which we need to pay special attention, may I also draw your attention, to the following statements.

"In many parts of the world, the increasing need of growing population for food fuel and fibers has led to deforestation, severe soil erosion, loss of water resources, and eventually declining crop production…Institutions of education in agriculture can play a leading role by clarifying issues and by helping to develop environmentally–friendly production technologies. They (also) need to incorporate sustainable development issues in their curricula by applying a holistic approach …There is growing belief that one of the more effective means of protecting the environment and agricultural resources is empower local people and others directly involved in the management of natural resources to make their own analysis and decisions of what should be done… Agricultural education (also) needs to incorporate new skills, such as environmental economics and knowledge, including the site-specific and time-tested knowledge of the environment that farmers have." (Issues and Opportunity for Agricultural Education and Training in the 1990s and Beyond" (FAO, 1997.)

Closing Remarks

Dr. Marylin Perlas
Executive Director
APEAEN

Dr. Tajima, honorary chair of APEAEN, Dr. Sevilleja, CLSU President, Dr. Cruz, PCC Director, Dr. Mancebo, Chair of the Organizing Committee, Dr. Lee, APEAEN President, ladies and gentlemen good morning.

Closing remarks is a very crucial part of the program which involves sincere appreciation of the efforts extended by several individuals and groups for without them, the conference would not be possible.

Before we close this morning program, let me thank everyone for coming today. Let me also express my sincerest thanks to the following:

- Dr. Nestor Alvarez, City Mayor of Science City of Munoz for hosting the welcome dinner last night. Thank you for his kindness and support.
- Congressman Joseph Violago who will be hosting the dinner for the socials tonight.
- Dr. Shigeo Tajima, for giving us a clear & detailed historical account of the evolution of APEAEN.
- Dr. Ruben Sevilleja & Dr. Libertado Cruz, for making the facilities available for us. Also, the hostel management (thru Jackson, Rey & Marivic) and for their support staff who assisted us.

I would like to thank the field trip security and safety committees of CLSU & PCC, the gorgeous presentations of the CLSU choral Maestro Singers thru the gifted conductor – Prof. Florante Ibarra, CLSU folk dance/serenade team and the CLSU for providing technical support.

Dr. Charles Maguire & Dr. Martin Mulder, for making themselves available as our plenary speakers inspite of their busy schedules.

Thank you for the APEAEN board for helping out finalize the decisions for the Conference & some organizational issues.

Thank you so much for the untiring efforts of the Secretariat coming from the whole staff of the ICE-CPAf, UPLB with complements from the Dean, CPAf & the ICE Director, Dr, Carolina Santillana.

Thank you for the continuous support of DAP-NPO, CHED with Dr. Castaneda & Dr. Medrano who will be around for the Conference.

Thanks for the ever supporting APO-TES, SEARCA for partly bearing transport expenses through Director Arsenio Balisacan, the Society of Korean Agricultural Education for the paper and poster awards, FAO for the

publication support of the proceedings which we hope to have for this Conference through Dr. Malcolm Hazelman.

Thank you for the New Enterprises for providing us transport facilities through Alvin Gabertan and drivers.

Thank you to all the committee members for making this activity possible. Specifically, let me sincerely thank Dr. & Mrs. Mancebo, Muy & Jez & Edwin for your full efforts, patience and understanding the inconveniences and all others whom I might forget mentioning.

We hope to have fruitful and open discussions in this 4-day conference.

Once again, welcome and good morning

Closing Remarks

(Closing Program)

Charles J. Maguire
Former Sr. Institutional Development Specialist
World Bank
Washington DC, USA

There is very little left to say. In my opinion we had a very warm welcome here at the Center and in the City and we thank the people who made this possible. We also had quite a good year with APEAEN, thanks to the leadership of Dr. Lee and we look forward to many more years of success in APEAEN. What I would say in these remarks at the end of the conference is that the future of APEAEN is really with the people in this room. Especially, again I emphasize the younger people in this room and the organization will be what you make it. It's not going to just happen by osmosis; you are going to be the ones who will make the suggestions for programs, for activities and for making this an important organization in the eyes of those who are concerned about education for agriculture and the environment and for the cause of the rural space in this region. So, in my closing remarks I would say please become active members and you heard the suggestion of Dr. Tajima when he said about the funding of the organization why it has been very generously supported by the Japanese in various parts of the Japanese government and especially APO. That may not happen in the future because of the changes in how the universities are being managed now and other organizations where budgets are tightening and many of the activities are on a business basis; everything has a cost and everything has to be accounted for. So, we have to put our minds together and in that I'm asking all of you to contribute to the ideas of how we can make this a financially viable organization. I think it's too valuable to give up now and allow it to disappear with the influx of new members and young members. The future is here and I think you are in. So, I would like to thank everybody who made this possible. I don't want to list names but to thank everybody who made this possible including the team that organized our stay here in this beautiful facility. Those behind the scenes especially those we never mentioned since we came here and who made all the arrangements and have fed us and entertained us last night and earlier on with the beautifully trained choir and dancers. So, all in all I would say, Dr. Lee, we had a very good conference; we have accomplished a lot and we have started thinking about a lot of things. So, good luck on your return trip home. We are not out of touch. Once we leave here we are easily connected and we should be connected and our website should be and will be an active place where we can interact. So, thanks to everybody.

Keynote Address

(Closing Program)

Dr. William C. Medrano
Executive Director
Commission on Higher Education

I. Greetings

Dr. Yong Hwan Lee, President of Asia Pacific Association of Educators in Agriculture and Environment; APEAEN Executive Director, Dr. Marylin Perlas; convenor and organizers of this Conference led by Dr. Samuel Mancebo, Dr. Ruben Sevilleja, President of Central Luzon State University; Dr. Libertado Cruz, Executive Director of the Philippine Carabao Center; officials from the local government units; plenary session speakers; educators and researchers; participants; guests; friends; ladies and gentlemen — good afternoon!

First off, I like to congratulate the Asia Pacific Association of Educators in Agriculture and Environment, Inc., on its 10th year of unwavering service and contribution to the development and professionalization of agriculture and environment educators as our partners in various development endeavors.

As officer of the Philippine Commission on Higher Education and an agriculture educator myself, I feel honored but humbled to be invited in this "3rd International Conference on Agriculture Education and Environment" to share my thoughts on current issues facing agriculture education and our environment as well as on your chosen theme, *Preparing for the Future: Rethinking Higher Agriculture Education and Environment in Asia Pacific*.

II. INTRODUCTION

I take a look back some two or three decades ago and I reckon that the barometer of success in agriculture was agricultural commodity production — just produce, produce, and produce! Coming into the 21st century, that is not the case anymore. This is not to say that "food for every table" is not a good political propaganda or rather agenda. I just say it is not bad at all.

However, energy crisis, urbanization, human diet changes affected by health and lifestyle, exponential population increase, climate change,

migration of laborers, trade liberalization, and other equally unprecedented challenges facing agriculture both at local and global scales beg a more intriguing and perhaps so dumbfounding a question to be answered overnight: What strategy to use and how to do it to make robust agriculture to cope such mountainous pressures?

Out present agriculture has evolved from production agriculture into multifunctional agriculture. This multi-functionality concept recognizes agriculture as a multi-output activity producing both commodity such as food, feed, fiber, and fuel, and non-commodity outputs such as ecosystem services, landscape amenities, and cultural heritages — in short the socio-economic utility parameters.

Never before have agricultural knowledge, science and technology (KS&T), agricultural research development and extension (RD&E), and allied themes been so in demand and important in ensuring equitable, and environmentally, socially and economically sustainable development. It is logically incumbent for us stakeholders, particularly in the higher agriculture education, to adopt a paradigm shift, from a tactical and strategic point of view, that involves realigning the orientation of our institutional focus and programs to address these agricultural and environmental challenges and to strengthen institutional arrangements that invite reactive collaboration between public and private sectors.

Let me expound on some issues that were put forward in this international conference.

III. ISSUE #1: What types of graduates will Asia need to meet these challenges of the future?

In the context of the Asian regions, there is an overarching concern with poverty and livelihood options open to relatively poor populations. Acknowledging current challenges and accepting some of the options available require a long-term and democratic commitment from different decision-makers. It also translates to continuing dependence on science, technology, knowledge, and human ingenuity to meet the challenges, opportunities, and uncertainties. Hence, the need to re-engineer our higher education al programs for agriculture to suit to the fast changing trends in agriculture and environment.

Looking not too far ahead into the future, we are seeing Asia needing young and dynamic "humanware", that is, researchers and scientists who are well-versed in what we call as exciting and even glamorous "new sciences" and "new themes". These include bioenergy, biotech, climate change, human health, natural resource management, trade & markets liberalization.

A. *Bioenergy*

When the cost of fossil fuel breached sixty dollars ($60) per barrel coupled with increased awareness of climate change and concerns with energy security, bioenergy specifically modern bioenergy which comprises liquid biofuels, bioelectricity and bioheat from solid or gasified biomass, has been put into public limelight. In the Philippines there is so much media hype now on biofuel crops e.g. jatropha and sweet sorghum.

The economics of bioenergy and the social and environmental impact depend on many factors such as the type of crops and biomass and conversion technology. Further down the road is the possibility of using algae or cynobacteria cultivated in ponds or bioreactors in saline water and industrial carbon dioxide to produce this type of energy.

By and large, many questions in the development of first or higher generation bioenergy will require in-depth probe and further research.

B. *Biotechnology*

Biotechnology is inclusively defined as the "manipulation of living organisms to produce goods and services useful to human beings". Modern biotechnology is associated with molecular tools and genomic techniques. One field we are very familiar with is genetic engineering, which creates genetically modified organisms (GMOs) or transgenics.

In the Philippines for instance, there is a need to produce drought resistant, pest resistant and high-yielding varieties of many important crop commodities. Future R&D must also be addressed to settle issues and constraints relative to integrating biotechnology into societies.

C. *Climate Change*

I believe "The Inconvenient Truth" video was played to you. For some of you who were lucky to see it, perhaps you have now some visual idea of possible scenarios resulting from climate change. In relation to agriculture, climate change issue presents decision makers with a set of formidable challenges, and these include understanding the inherent complexity of the climate-agriculture systems interaction.

Agriculture depends on climate. Agricultural production depends on the availability of essential natural ecosystem inputs such as water, soil nutrients, biodiversity, and atmospheric carbon dioxide that are affected both directly and indirectly by climate change. On the other hand, climate depends on agriculture. Overall, agriculture contributes 14% of global greenhouse gas emissions mostly through emissions of methane and nitrous oxide. Land use, land use change and forestry contribute another 17% in the form of carbon dioxide. In a nutshell, climate change will have impact on crop yields, fisheries, forestry, livestock, and the range and distribution of animal and plant diseases and pets. There is a serious potential for future conflict over habitable land natural resources, such as freshwater, as a result of climate change.

Urgent research concerns are in the areas of pursuing efficient methods that reduce effectively emissions from agriculture and forestry, make agriculture and forestry best adapt to local conditions, and evaluate the role of biofuels in relation to climate change.

D. Human Health

Agriculture, nutrition, and health are inextricably linked. Nutrition-induced poor health conditions are usually the results from either under-nutrition, micronutrient deficiencies, as well as imbalanced food intake. Meanwhile dietary patterns are the driving force behind many of the chronic diseases like heart disease, stroke, diabetes, and cancer. These are commonly the offshoot of low dietary diversity with low intake of fruits and vegetables and high intake of fats, sugar, and salt.

There is also a growing concern for food safety and the emergence of infectious diseases. Food safety hazards in the form of biological, chemical, physical contaminant, or agent may be introduced anywhere along the food chain, but mostly happen during production and handling of commodities.

The incidence and geographic range of many emerging infectious diseases such as bird flu and mad cow disease are attributed to the intensification of crop and livestock systems on top of many economical, social, demographic, and environmental factors.

The term "nutriceuticals" is relatively new, but the concept of deriving medicinal value from our food sources is well-established. The opportunities for this exciting field are getting brighter by the day as people are getting more conscious of their health.

E. Natural Resource Management

The Philippines has been tagged as the recipient of most number of natural and man-made disasters. It is even made as a "laboratory" by many researchers where newly developed methods of disaster management are being tested.

Our natural capital— soil, water, plant and animal diversity, vegetation cover, energy, climate and ecosystem— has been over-exploited resulting to soil erosion, loss of soil fertility, soil salinization, decreased biodiversity and ecosystem function. At one extreme, this exploitation has been for commercial gain, and at the other extreme, for subsistence household survival.

There is a need for promoting less exploitative natural resource management strategies for resource resilience and protection through innovative processes, programs and policies. We also need to resolve underlying causes of declining productivity inherent in natural resource mismanagement through improved ecologically-based options.

F. Trade and Markets Liberalization

Agricultural trade can offer opportunities for the poor but many distributional impacts among and within countries in many cases have not been favorable for small-scale farmers and rural livelihoods. A level playing field between countries at vastly different stages of agricultural development does not translate into equal opportunity. Usually the poorest developing countries are the net losers under most trade liberalization setups. Strong, flexible, and transparent international and national trade and market policies are necessary to create equal opportunities for all sides in the agricultural trade liberalization equation.

G. Traditional and Local Knowledge Synthesis

We cannot afford to overlook traditional and local knowledge if our goals are to be achieved because many of the effective and sustainable technologies with worldwide scale application have originated from locally-based innovations.

In numerous cases traditional and local innovators in collaboration with formal agricultural knowledge and science and support services have empowered communities, maintained traditional cultures while improving incomes, nutrition, and food security.

Relative to education, widespread application of collaborative approaches require complementary investments in the education of technicians and professionals in order to strengthen their understanding of and capacity to work with local and indigenous communities, and support to curriculum development activities that value and provide opportunity for field-based experience and apprenticeships under educational guidance of communities. This must be supported with active effort to extend connectivity through information and communications technologies to traditional and local knowledge actors.

IV. Issue #2: Are the expectations of stakeholders who employ graduates of higher agriculture education being met?

There is a large mismatch in the kind and quality of agriculture graduates and the demand of industry. This scenario is pervasive especially among developing countries.

Taking the Philippines as an example, the country has only 48 research scientists and engineers (RSEs) per million population. This number is very low compared to UNESCO's benchmark of 340 per million population. The available number RSEs is used as a yardstick for economic development. The lack of RSEs weighs down on the country's ability to achieve further economic growth as it is not attracting enough technology-based investors who look for the availability of high-level scientific and engineering manpower. The current situation reduces the country's competitive edge against countries that have embarked on knowledge-based economy.

In the same vein, in one national labor summit, the Philippine Department of Labor and Employment reported that about 300,000 skilled and physically-able agribusiness workers are needed. What is surprising is that we have been producing a lot of graduates in agriculture and fisheries, yet a considerable percentage is unemployed. This dull scenario calls for a serious look at the situation of perhaps a comprehensive research that touches on many socio-economic aspects including reviews on our higher education agriculture curriculum on the part of the government. There is a need to create a conducive policy environment to generate employment opportunities and incentives to be able to address the alarming decline in the number of enrollment of agriculture and fishery.

V. Issue # 3: Can Higher Agriculture Education in its present form survive without change?

The human economic activity, with its very dynamic and ever-expanding nature, always demands for top-notch agriculture manpower resources to steer the wheel in the face of critical issues such as food insecurity, climate change, and emergence of infectious diseases.

We can not have a status quo in our current educational system. We can not stagnate, we have to innovate. That said, it means that we have a lot of benchmarking and re-engineering of our higher educational agendas and strategies for agriculture if we are to achieve sustainable development in agriculture and environment.

VI. CONCLUSION

In conclusion, our higher educational programs in agriculture must be properly aligned with the changing and emerging need of the time. We have to reposition the curricular program in agriculture to make it multifunctional to answer critical issues of energy crisis, natural resources degradation, climate change, global trade liberalization, human health and nutrition, food security, population explosion and migration. We must all aim to produce a critical mass of top-caliber, highly competent graduates to improve our human capital and to suit it with the human resource need of multi-faceted and multi-functional agriculture and environment.

Lastly, I have reasons to believe that this International Conference is a successful one and with this I would like to congratulate the organizers, APEAEN officers and members, sponsors and everybody. To our foreign delegates, I encourage you to give yourself a break, extend your stay, enjoy and experience the Filipino hospitality and our beautiful tourist places.

Thank you.

Out-going Remarks

Dr. Yong Hwan Lee
President
APEAEN

Distinguished guests and participants from various countries, I just want to extend my gratitude and appreciation to all of you. I am very happy that we have completed successfully the Third International Conference on Agriculture Education and Environment and the celebration of the APEAEN 10th Anniversary here at the Philippine Carabao Center, Department of Agriculture, Science City of Munoz. I would like to thank honorable Dr. Tajima, Dr. Charles Maguire and Dr. Libertado Cruz, the executive director of the Philippine Carabao Center. I would also like to express my deep appreciation to APO, FAO, Society of Korean Agriculture Education, SEARCA, Development Academy of the Philippines – National Productivity Organization, the Philippine Carabao Center, Department of Agriculture, UPLB College of Public Affairs Institute of Community Education and the Commission on Higher Education. Also, I would like to express my deep appreciation to all of the presenters and guest speakers for their splendid presentations. I also express my deepest appreciation to Dr. Mancebo and Dr. Perlas, who came all the way from Canada for this conference. Also, I would like to thank the Japanese participants for accepting the proposal and request to hold the fourth international conference in Japan, though I know they will have difficulties to host the conference. I hope we will all meet again in the beautiful Hokaido of Japan to again hold a successful conference. Thank you so much and I wish everyone good luck and a happy and safe return to our respective countries. Thank you so much.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The Best Paper Awardees...

DR. RUEL V. MANINGAS
United Nations Environment Programme (UNEP) - Philippines

***Best Paper**: Providing IT Technical Advisory in Biosafety Education: Experience in Asia Pacific*

DR. CELY S. BINOYA
Camarines Sur State Agricultural College
Philippines

***Best Paper**: Agroecosystems Analysis for the Sustainable Development of Lake Buhi*

DR. MALCOLM HAZELMAN
FAO, Regional Office, Bangkok, Thailand

***Best Paper**: Improving the Reach of Higher Agricultural Education in Asia-Pacific: Some Lessons for Improving Education for Rural People*

DR. HAYDEE D. LASCO
Philippines

***Best Paper:** Where Have All the Graduates Gone? The Case of 2000 to 2005 BSA Graduates of the Univesity of the Philippines Los Baños*

The Best Poster Presentation Awardees...

CHYUL – YOUNG JYUNG, SU-JUNG CHOI, HYO-SHIN LIM and YOUNG-EUN KIM, South Korea

Best Poster Presentation: *Development of Agricultural Career Exploration Program for College Students*