

Creating greater synergy in the economic analysis of environmental issues: *Our stories*



About EEPSEA

The Economy and Environment Program for Southeast Asia (EEPSEA) was established in May 1993 to support training and research in environmental and resource economics. Its goal is to strengthen local capacity in the economic analysis of environmental issues so that researchers can provide sound advice to policymakers.

To do this, EEPSEA builds environmental economics (EE) research capacity, encourages regional collaboration, and promotes EE relevance in its member countries (i.e., Cambodia, China, Indonesia, Lao PDR, Malaysia, Myanmar, Papua New Guinea, the Philippines, Thailand, and Vietnam). It provides: a) research grants; b) increased access to useful knowledge and information through regionally-known resource persons and up-to-date literature; c) opportunities to attend relevant learning and knowledge events; and d) opportunities for publication.

EEPSEA was founded by the International Development Research Centre (IDRC) with co-funding from the Swedish International Development Cooperation Agency (Sida) and the Canadian International Development Agency (CIDA). In November 2012, EEPSEA moved to WorldFish, a member of the Consultative Group on International Agricultural Research (CGIAR) Consortium.

EEPSEA's structure consists of a Sponsors Group comprising its donors (now consisting of IDRC and Sida) and host organization, an Advisory Committee, and its secretariat.

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Front cover photo: Fishermen pulling in their catch in Dipolog City, Zamboanga del Norte, Philippines
by Jose Viven Balsomo. The photo won 3rd place in EEPSEA's Photo Contest: Capturing the Value of Nature.

This booklet was edited and laid out by Julianne Bariuan-Elca.

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INTRODUCTION

Creating greater synergy



Dr. Herminia A. Francisco has been the EEPSEA Program Director since 2007.

In EEPSEA's 23 years of existence, the Program has awarded 435 research grants carried out by 776 researchers. It has also provided training grants to 2,809 researchers, 1,314 natural resource managers and policy makers, 80 justices, 79 journalists, and 23 NGO representatives. This compilation of stories brings these numbers to life.

The narratives reflect how our research and training grants have supported the career and work of our alumni. We feature their account of how they influenced environmental policies and decision making using their research findings. Others create this influence by serving as policy advisors or consultants to assist in their respective government's efforts to incorporate environmental values in economic analysis of policies and programs. With 85% of our training grants and almost all of our research support going to academics, many of the stories here talk about EEPSEA's influence in promoting career advancement and supporting environmental economics education in the region. On these academics lie our hope of continuing the work that we have started, capitalizing on the synergy that we have built through networking and cross-country research projects, and their long years of interaction with the international experts who mentored them in their research projects. Together, we are confident that our EEPSEA alumni from all over the region will help continue our work so that they too can nurture young minds who will continue the legacy of capacity building for environmental economics research in the future.

From the beginning, EEPSEA researchers are charged with selecting research with practical applications to priority environmental

problems. The aim is to bring research results to the attention of policymakers and relevant stakeholders. Policy influence takes time though, and comes in various forms. And it also largely depends also on the sensibility of policymakers and the strength of the other interest groups who may be affected negatively by the proposed change. Whatever policy impacts our research might have attained, it has always been our commitment to provide decision makers relevant with evidence-based information for them to hopefully use in order to ensure our society a better environment. Thus, EEPSEA also provides our researchers funding support to communicate their findings to relevant users and to hold policy dialogues. We believe that researchers need to work closely with policymakers, natural resource managers and local community groups as this will contribute to generating greater synergy in the efforts to slow down on-going environmental degradation.

We are banking on the synergy that we have fostered with our alumni to fuel the continuation of capacity building efforts in Southeast Asia.

In a year's time, EEPSEA as a Program will cease its operation. We are banking on the synergy that we have fostered with our alumni and on the relationships they have formed with the natural resource managers in their countries to fuel the continuation of capacity building efforts for environmental economics research in the region. The establishment of the Economy and Environment Partnership in Southeast Asia

(EEPSEA Partnership) by EEPSEA alumni from various countries in the region is a good indication that EEPSEA's legacy will live on. The Partnership is composed of: the Economy and Environment Institute of the Lower Mekong Sub-region (EEI-LMS), the Economy and Environment Group (EEG-Philippines) from the Philippines, the Economy and Environment Institute in Vietnam (EEI-Vietnam), the Economy and Environment Societies in Cambodia (EES-Cambodia), the Economy and Environment Association in Malaysia (EEA-Malaysia) and the Economy and Environment Institute in Indonesia (EEI-Indonesia).

To them I entrust EEPSEA's mission of capacity building for environmental economics research in Southeast Asia. I wish them success and I do hope that donors will support their work so that the EEPSEA Partnership can continue supporting environmental policymaking in the region.



Part 1. Policy

***These stories
demonstrate the
relevant role played
by environmental
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towards improving
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environment.***

EEPSEA provides research grants to build research capacity so that local researchers can provide sound advice to environmental policy and decision makers. Hence, the Program encourages and supports its research grantees' efforts in communicating their research findings to key decision makers so that these may be used to influence environmental policy making and management.

Throughout the years, EEPSEA has made quite an impact through the studies it has funded and through the collective effort of its researchers in sharing the implications of their respective research findings. This is highlighted in the testimonials in this section.

The impacts range from those specific to the community wherein the research project was implemented to those that made waves at the national level. Regardless of the scope of the impact, which is of course dependent on each individual study's scope, these stories clearly demonstrate the relevant role played by environmental economics researchers and the value of their research findings towards improving how we manage and value our natural environment.

& community impacts

Making waves in mangrove rehabilitation



Dr. Alice Joan Ferrer, a professor at the University of the Philippines Visayas, with BFAR Director Asis Perez during the launching of the book based on her EEPSEA research grant.

Our 2011 EEPSEA study on the *Reversion of Disused Fishpond Lease Agreement Areas to Mangrove Forests in Region VI, Philippines* has made huge waves in the management of public lands released from Fishpond Lease Agreements (FLAs) in the Philippines. Its findings were used by the Philippine Bureau of Fisheries and Aquatic Resources (BFAR) as a reference material in revising Fisheries Administrative Order (FAO) 197 (Rules and Regulations Governing the Lease of Public Lands for Fishpond Development). Now FAO 197-1, the policy has been revised to include how such public lands can be used for mangrove-friendly aquaculture. I was a member of the Technical Working Group that prepared the draft FAO version.

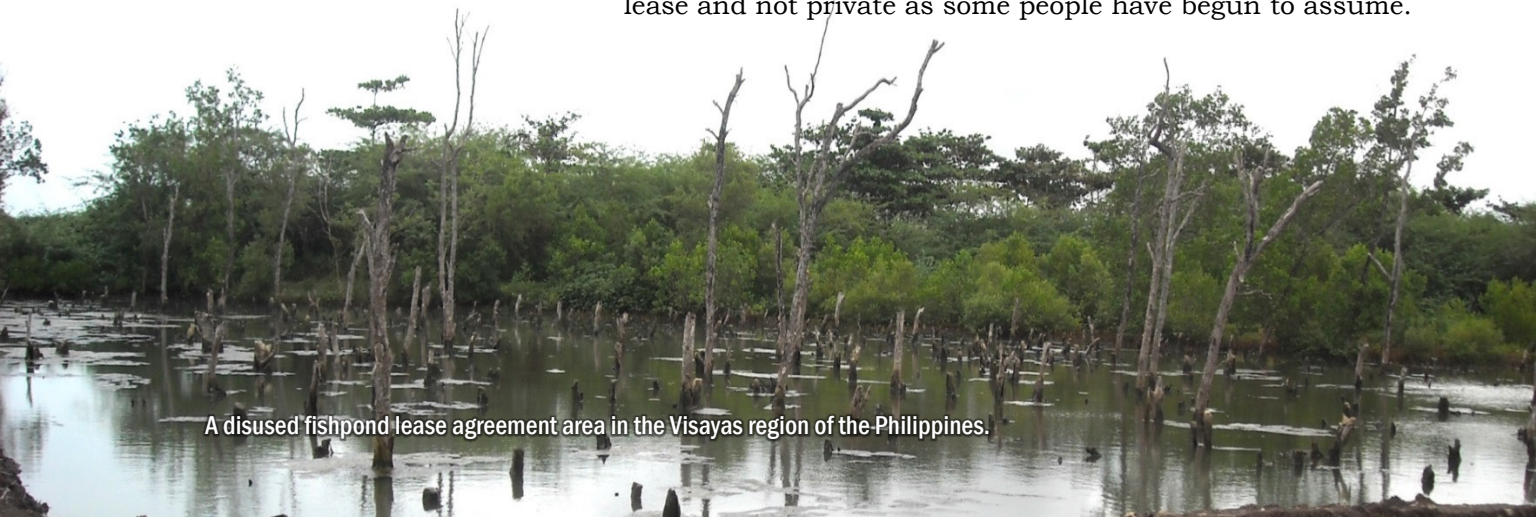
My co-authors and I also wrote a book on *Disused Fishpond Areas Covered by Fishpond Lease Agreement in Western Visayas* using materials from our EEPSEA study. The book was published by BFAR and was launched in October 2012 and has since been distributed to all BFAR local offices in the country. This book was also cited in the *Manual on Mangrove Reversion of Abandoned and Illegal Brackish Water Fishponds* published by the Zoological Society of London (ZSL), with support from GIZ.

My involvement in this EEPSEA-funded research has also opened doors for me as a resource person and trainer. I have been invited as a resource person in several consultative planning workshops jointly organized by the country's Department of Agriculture, Department of Agrarian Reform and Department of Environment and

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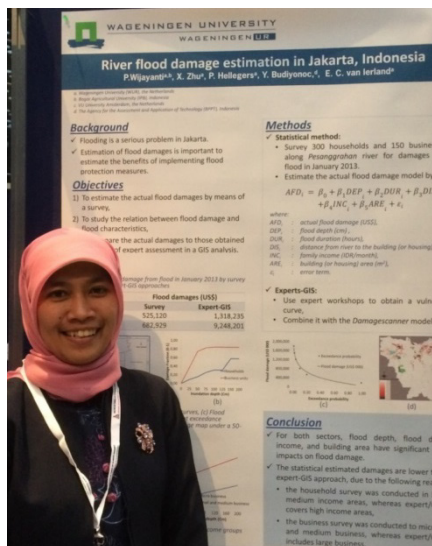
Natural Resources on the best use of abandoned, underdeveloped and underutilized land released from FLAs. I was also invited as a resource person in coastal resource management planning workshops of two municipalities in the Visayas region through the conservation project supported by ZSL in the country. Additionally, I was asked by BFAR to write the proposal for a training course for their staff on conducting inventory and evaluation of public lands released for fishpond development purposes. The conduct of the training course was later on supported by BFAR and GIZ with ZSL and SEAFDEC.

The impacts that our study have made since its publication in 2011 has made it possible for more to recognize the importance of managing abandoned and underutilized public coastal lands and to rehabilitate them as mangrove areas. It put forward several recommendations, which included the need to increase the rent for public land, to clearly define the process of cancellation and reversion (both administrative and biological) of FLAs, and to identify sources of financing for mangrove rehabilitation activities. We also indicated the importance of putting up signboards that indicate FLA issuance and expiration on properties under such agreements so people are informed that the properties are public land on lease and not private as some people have begun to assume.



A disused fishpond lease agreement area in the Visayas region of the Philippines.

Contributing to Jakarta's flood reduction efforts



Ms. Pini Wijayanti is a lecturer at Bogor Agricultural University's Department of Resource and Environmental Economics.

My EEPSEA research project was on the *Estimation of River Flood Damage in Jakarta: The Case of Pesanggrahan River*. The Jakarta local government found my EEPSEA study's estimates on flood damage and on benefits from ongoing flood control measures to be useful in informing decision making with regards to flood reduction.

I presented my findings to Jakarta governance during a workshop in October 2013. It was attended by representatives from the local governments of South Jakarta and West Jakarta, the Regional Disaster Management Agency DKI Jakarta, and the Badan Meteorologi, Klimatologi dan Geofisika (BMKG), which is the Indonesian council for meteorology, climatology and geophysics. Specifically, government agency representatives found my study's estimation of actual flood damage per household more detailed and accurate than the results of the government flood damage survey for all Jakarta areas.

The results on the role of women during flooding events also provided valuable information. Moreover, my study produced a range of land compensation values that should be received by households living in Jakarta's Pesanggrahan area. These results were found very useful because this kind of survey has not yet been conducted. Furthermore, my research contributes a chapter to the book *Jakarta Climate Adaptation Tools Report*, published by the Dutch National Research Program Knowledge for Climate.

Government agency representatives found my study's estimation more detailed and accurate than the results of the government flood damage survey for all Jakarta areas.

This research produces five main results. Two of them (i.e., estimation of river flood damage in residential and business sectors) have been presented in two regional workshops in Jakarta in August 2014: the workshop *Jakarta Climate Adaptation Tools: The pathway towards its resiliency* and the *Jakarta Annual Research Dissemination Workshop*. I also presented those results in the conference *Deltas in Times of Climate Change II* in September 2014 in Rotterdam.

On a personal note, the EEPSEA research grant gave me the opportunity to conduct a large research project, which allowed me to further upgrade my skills as well as expand my professional network nationally and internationally. It also significantly contributed to my PhD dissertation as I received valuable comments in improving my dissertation through the EEPSEA research mentoring scheme.



The Jakarta city administration's river normalization program, discussed in Pini's EEPSEA research report, is part of efforts to minimize the number of areas inundated by floods in the capital.

Alliance building towards green rubber



Dr. Zhuangfang Yi, a researcher at the World Agroforestry Centre East Asia Node, learning more about rubber agroforestry from a rubber farmer.

My EEPSEA grant in 2014 has enabled me to publish a peer-reviewed paper, a working paper and a book chapter. But more important than these academic achievements is the fast growth of my work network and knowledge on the socio-environmental impacts of rubber monoculture in the Mekong region. It has therefore become my personal advocacy to push for green rubber in rubber monoculture-dominated landscape in China's Yunnan province as well as in Laos, Myanmar, Cambodia, Vietnam and Thailand.

The green rubber concept is the core idea behind my EEPSEA research project. It's a wildlife and environment-friendly cultivation system, which is the opposite of rubber monoculture. The expansion of rubber monoculture in deforested tropical forests has resulted in a huge loss of ecosystem services and biodiversity in the region.

Xishuangbanna, China as my EEPSEA grant study area is the perfect place to study the loss in ecosystem service and biodiversity that result from rubber monoculture expansion, along with the possibility of establishing environment-friendly rubber plantation and market-based incentive schemes. It has been through the rubber boom that most countries like Cambodia, Laos, and Myanmar are undergoing in Mekong region. Hence, the lesson from this area can serve as a reference for other tropical countries in the coming years.

During the course of my EEPSEA study, my World Agroforestry Centre colleagues and I built the Xishuangbanna Alliance. The alliance aims to bring

together farmers, local governments, academic research institutes, entrepreneurs and NGOs to work towards building sustainable and green rubber in Xishuangbanna. We hosted a successful workshop in 2014 participated in by 55 representatives from the abovementioned stakeholder groups. Since then, a 6,600-hectare green rubber program has been launched by the Xishuangbanna government. It is the first environment-friendly rubber plantation program in the Mekong led by local governments with full stakeholder participation.

I am now working on a new research study on how market-based incentive scheme and ecotourism can help bring back biodiversity and improve economic resilience among Xishuangbanna farmers. I am conducting it through a grant from the National Science Foundation of China for Young Scientists. I have also been interviewed by various media (e.g., GoKunming, Atlantic, ChinaFile, Yale360, New York Times) as a rubber issue researcher.

I was born and raised in Xishuangbanna and so I am doubly grateful for the EEPSEA research grant I received as it allowed me to give back to my motherland. Now, I am serving as lead consultant in developing guidelines for sustainable and responsible rubber cultivation and investment in the Mekong region, a project supported and funded by China's Ministry of Commerce and the UK Department of International Development. It is still too early to say how much difference we are going to make, but I have high hopes that my future research on green rubber can benefit millions of rubber farmers in the Mekong region, like my parents back home in Xishuangbanna.



Intercropping in a young rubber plantation near Jinghong, Xishuangbanna, China.

Financing protected areas



Dr. Gem Castillo is the President of the Resource and Environmental Economics Foundation of the Philippines, Inc., which hosts the Economy and Environment Group - Philippines.

The results of our EEPSEA cross-country research project entitled *Fiscal Gap and Financing of Southeast Asia's Protected Areas: A Cross-Country Analysis*, which includes Alexander Anda's study on *Resource Gap and Benchmarking Protected Areas: A Case Study in the Philippines*, have been presented in several fora, conferences, workshops and meetings within and outside of the region. In the Philippines, the results of the Philippine case study were presented in various meetings including those with senior officers of the Protected Areas and Wildlife Bureau (PAWB) and the Department of Environment and Natural Resources (DENR).

As a result of these presentations, the project was cited by DENR-PAWB as one of the main basis that led to the Issuance of Republic Act No. 10629, which amends Section 16 of RA No. 7856 (National Integrated Protected Areas System of 1992) by providing for the retention by the Protected Area Management Board (PAMB) of 75% of the protected area revenue accruing to the Integrated Protected Area Fund (IPAF). RA 10629 was approved on September 26, 2013. Previously, PAMB can only retain 25% of the revenue.

DENR and the Department of Budget and Management (DBM) subsequently issued a joint circular on implementing RA 10629, which encourages the development of innovative financing for protected areas in the country. This was followed by a series of trainings and workshops by PAWB and DBM on alternative financing mechanisms geared towards Protected Areas

Our project was cited as one of the main basis that led to policy that allows protected areas in the Philippines to retain 75% of the funds they generate.

Superintendents. The results of our EEPSEA research are presented in all those trainings.

As for the cross-country project results, it was featured as a plenary presentation during the *International Year of Forest Conference* at Michigan State University in October 2011. It was also a keynote presentation during the *International Conference on Conservation Financing in Southeast Asia* in March 2015 in Manila.



El Nido in Palawan, Philippines was among the protected areas covered by Alex Anda's EEPSEA project.
Photo by Jackversloot under creative commons license at flickr.com

Valuing riverbank erosion in Thailand



Dr. Phumsith Mahasuweerachai is an Assistant Professor at Khon Kaen University's Department of Economics in Thailand.

Officials from the Marine Department and the provincial government where my 2013 EEPSEA research study on *The Welfare Effects of Mekong Riverbank Erosion: Do the Choice of Measures Matter?* was conducted found its findings very useful. According to them, compared to previous studies, my research findings provide more details on the impact of riverbank erosion on the livelihood of those in the northeast region of Thailand.

Specifically, they found my study's findings on the damage cost of riverbank erosion faced by households more accurate than the results they have on hand. In addition, my study also identified which areas need to be prioritized in terms of mitigating the erosion impact. The officials found this most useful in informing budget prioritization as they can plan to construct the riverbank protection system in areas where the erosion has the highest impacts on people's livelihood.

Furthermore, the Thailand Research Fund took note of the results of my study and indicated that, given the high cost of riverbank erosion, this should be factored in during land policy design.

My study also contributes to academic discussions on the use of the cost-benefit analysis method. Specifically, besides determining the cost of damage to households because of riverbank erosion, my study also looked into what is the appropriate monetary measure in valuing some non-market goods—in this case, the non-market

Officials from the Marine Department and the provincial government where my study was conducted found my findings more accurate than that they have on hand.

good being the ecosystem service of protecting the riverbank against erosion.

The result of this part of the study was presented in the *7th Annual Conference of the Society for Benefit-Cost Analysis* held in March 2015 in Washington, D.C. It raised a lot of discussion and debate among the conference participants. Many agree that this topic requires serious attention because it would change the way of conducting non-market goods valuation and benefit-cost analysis as it is practiced today.



Nakhon, Phanom in Thailand was among the study sites of Phumsith's EEPSEA research project on the cost of riverbank erosion.
Photo by Chris Khamken under creative commons license at flickr.com

Bringing attention to the costs of air pollution



Dr. Achilles Costales (right) with Baguio City CEPMO Chief Ms. Cordelia Lacsamana. Archie is a Professor of Economics at the College of Social Sciences, University of the Philippines Baguio.

My experience with my first EEPSEA research project was quite gratifying. It affirms the conviction that significant impacts can indeed come out of a research wherein the academe works alongside local government institutions and concerned stakeholders toward a shared goal.

Our EEPSEA study was on the cost of illness as a result of exposure to elevated levels of Particulate Matter 10 (PM₁₀) and the benefits and costs of an alternative mode of public transport to reduce air pollution in Baguio City's Central Business District (CBD). From the start, our research team directly collaborated with local and regional policymaking institutions that address air pollution issues in Baguio and in adjacent municipalities. These included Cordillera Administrative Region's Environment Management Bureau of the Department of Environment and Natural Resources (EMB DENR-CAR), the Baguio City Mayor's Office through the offices of the City Environment and Parks Management Office (CEPMO) and the Epidemiology and Surveillance Unit (ESU) of the City Health Services Office, and the office of the Regional Director of the Department of Science and Technology (DOST-CAR).

Our collaboration with these government agencies not only helped us gain access to much needed data for this study but also enabled us to efficiently share our findings for maximum policy influence. EMB DENR-CAR invited me as the Academe Representative in the Technical Working Group on Air Quality Control Strategies, Evaluation and Rules/Standards Modification for the Baguio-La Trinidad-

Itogon-Sablan-Tuba-Tublay (BLISTT) Airshed, a five-municipality agglomeration. Moreover, our University Chancellor officially appointed me as his alternate in the July 2015 Governing Board of the BLISTT Airshed given my grasp of the air pollution issues in the locality. The Governing Board, chaired by the EMB DENR-CAR Regional Director, and composed of local government executives and sectoral representatives, is the policy and decision-making body on the measures to be undertaken to improve the air quality within the BLISTT area.

On top of these, during the public forum we conducted in September 2015 to further disseminate our findings, ESU Head Dr. Donnabel Tubera voiced her appreciation of our study, sharing that this was the first time that the local health data, which their Office painstakingly gathers over the years, was put to valuable use. Moreover, she asserts that our findings on the high cost of illness provide their office with the needed information to advise policy and decision makers of the city government to prioritize the monitoring of specific types of illnesses.

DOST-CAR Regional Director Dr. Julius Caesar Sicat also noted that our research findings provide his office with new and incisive insights on the societal benefits of their proposed Automated Guideway Transit (AGT) System as an alternative public transportation for Baguio CBD and the La Trinidad-Baguio link. In their own technical evaluation of the economic feasibility of the AGT System, health benefits were not considered. Hence, this new dimension from our study adds value to their technical proposals and advocacy for cleaner public transport alternatives.

An added bonus to this gratifying research experience is the unexpected media coverage received by our research findings, which were aired on local television and were published in a national daily.



The BLISTT Airshed Governing Board meeting Archie (center) attended is chaired by the Regional Director of CAR's Environmental Management Bureau, an agency under the Philippine Department of Environment and Natural Resources.

Ensuring Songkhla Lake's sustainability



Mrs. Kunlayanee Porpinatepong is an Assistant Professor at the Faculty of Economics, Prince of Songkla University in Thailand.

Problem-based research is an important research approach that I learned from EEPSEA's capacity building process. This approach inspired me and, as a result of my EEPSEA-funded research studies, my research capacity has grown. This professional growth has been valuable in both my teaching and research.

My first EEPSEA research project (2006-2008) looked at the pollution in Songkhla Lake and its impact on fishery production. Results indicate that several key market-based mechanisms could incentivize polluters to reduce the amount of pollution they produce. My second EEPSEA research grant (2010-2012) looked into the practice of overfishing in the lake with the aim of determining the most effective management control mechanism to ensure sustainability. It found that a co-management policy led to better results (in terms of reducing extraction levels and ensuring resource sustainability) than imposed external regulation.

The findings of these two studies have been shared in various academic forums as well as through policy dialogues with local stakeholders and through local media. They were also used as input during a workshop that discussed how to promote fishermen's

co-management of Songkhla Lake, which was organized the Southern Marine Fishery Resource of Songkhla province's Department of Fishery in August 2014. Moreover, the studies also helped me develop undergraduate courses for my university's economics curriculum (i.e., *Environmental and Natural Resource Economics: A Case Study of Songkhla Lake and Coastal Resource Economics*).

These EEPSEA-funded studies also enabled our research team to get funding to develop off-shoot projects, i.e., *Public Policies for Sustainable Sandy Beach Utilization* (2012-2014), and *Public Policy Movement: A Case of Sandy Beach Utilization and Conservation* (2011 to 2012). These were funded by the Thai Universities for Healthy Public Policies (TUHPP) and the Thai Health Promotion Foundation.

The research projects also opened doors for me as a resource person in coastal resource management (CRM). In 2015, I was invited by the Department of Marine and Coastal Resources (DMCR) to be part of the steering committee in determining the direction and framework for the implementation of the DMCR Act, Section 21, which provides guidelines in CRM. I was also invited by the civil court as a resource person in November 2015 to provide a testimony on the economic value of the natural resource damage in Maya Bay, Hat Noppharat Thara–Mu Ko Phi Phi National Park.



Kunlayanee with her research team during the conduct of the field experiments for her second EEPSEA research grant, which looked at overfishing in Songkhla Lake.

Sustaining community-led waste management efforts



Dr. Alin Halimatussadiah is a lecturer at University of Indonesia's Department of Economics.

In 2014, I was awarded with an EEPSEA grant to enable our team to further pursue our research on a community-led recycling activity called “waste bank” (*bank sampah*). A waste bank functions as a market that incentivizes the collection of recyclables. The research was motivated by the fact that the waste bank in Indonesia's Depok municipality expanded from only a few in 2012 to more than 300 units in 2014. However, proponents of the waste bank have shared that the participation rate of its members varies across areas, with some areas being particularly hard to encourage to join this effort.

Through our EEPSEA study, we intended to determine what factors affect members' waste bank participation. We used an experimental game to measure two of our variables of interest, trust and leadership, to see how they influence participation. Our results indicate that of the two variables, only the waste bank administrator's leadership plays an important role in encouraging participation. Hence, it seems that, rather than being driven by social motive, members' decision on whether or not to actively participate in waste bank efforts is driven by monetary benefits offered by the waste bank. Our study recommendations therefore highlight the importance of incentivizing households to sort waste because the costs of waste sorting are incurred at this level.

Our main findings have been disseminated to the Depok local government and the various waste bank communities. The Depok local government has now put more emphasis on the waste banks' sustainability as these community-led institutions play an important role in implementing the "eco-waste management" approach, which has recently been enacted through a local directive. The waste bank is now formally acknowledged as part of Depok municipality's waste management institution. This local government-community collaboration has led to a formal division of tasks with the government responsible for organic and residual waste, while the waste banks take care of inorganic waste.

My involvement in this EEPSEA project has led to my being recognized as a researcher in eco-waste management. I have been invited to several communities who also wish to build a waste bank. For instance, in collaboration with the Waste Bank Association of Depok and LAZ Harfa, a local NGO, our team built two waste banks as a pilot project in Pandeglang district in Banten province. Our local partner's active effort has led to their expansion into more than 30 waste banks in the district.

In my university, I am also assigned to supervise undergraduate and master level students working on the waste management issue. All these involvements have greatly benefitted me as they allow me to expand my knowledge on the broader issue of waste management.



Bank sampah volunteer employees weigh recyclables "deposited" by members.

Making Partido's eco-tourism master plan



Dr. Raul Bradecina (right), with PDA Board of Directors Chairman Hon. Ruel Velarde, after being awarded a plaque of appreciation for his “major contribution in the preparation of the Tourism Master Plan”. Raul is now the President of Partido State University.

My EEPSEA research project on the *Economic Valuation of the Beachscape Beauty of Caramoan, Camarines Sur, Philippines: Towards Establishing Payment for Environmental Services for Sustainable Eco-Tourism* largely informed the tourism master plan for the Partido area, the fourth congressional district of the Philippines' Camarines Sur province, which is composed of ten municipalities. My university was commissioned, with me as the project leader, to develop the tourism master plan by the Partido Development Administration (PDA). PDA is a government-owned and controlled corporation that coordinates, implements, and evaluates trans-municipal plans and projects in the district.

The key insights and recommendations from my EEPSEA research study were integrated into the strategies and action plans of the tourism master plan. A chapter strategy was created on sustainable tourism and coastal resource governance through sustainable fund generation by establishing a user fee system in Caramoan and in every coastal local government unit (LGU) in the district. In this user fee system, a section was provided defining who will be the collecting entity, the mechanisms for collection and safekeeping of the user fees, and how these will be allocated (with fixed percentages of fund allocation). This is to ensure that the fees collected are automatically allocated for: a) restoring and enhancing coastal ecosystems and tourism assets; b) providing livelihood to fisher folks and upland farmers; c) incentivizing the *Bantay Dagat* (a community-based volunteer sea patrol organization) and the marine

***My EEPSEA study's
key insights and
recommendations
were integrated into
the Partido tourism
master plan.***

protected area management council; and
d) information, education and communication (IEC)
campaigns, among others. These were institutionalized
by LGU ordinances.

The tourism master plan was unanimously approved
in session by the PDA Governing Board in August
2014. It is implemented by PDA, which is mandated by
law to orchestrate the overall development directions of
LGUs in the area with full backing of the district
congressman.



Raul facilitating a community discussion on tourism issues with residents and barangay and municipal officials of Lahuy Island, Caramoan, Philippines in 2013.

Institutionalizing environmental economics in decision-making



Dr. Orapan Nabangchang is an Associate Professor of Economics in Thailand's Sukhothai Thammathirat Open University, EEPSEA's Deputy Director for Training and Partnership, and the Director of the Economy and Environment Institute - Lower Mekong Sub-region.

My study on the *Private Contributions Towards the Provision of Public Goods: The Conservation of Thailand's Endangered Species* and EEPSEA's cross-country project that looked into the public's willingness to pay for the conservation of marine turtles, in which I served as project leader, created many opportunities for me to undertake a number of valuation studies for public and international agencies in Thailand that are involved in the management of natural resources. These include the Thailand Department of Marine and Coastal Resources (DMCR), the Thailand Department of National Parks, Wildlife and Plants (DNP), the Biodiversity-Based Economy Development Office (BEDO), the International Union for Conservation of Nature (IUCN), the World Wildlife Fund for Nature (WWF), and the United Nations Development Programme (UNDP). The technical back-up and mentoring that I received from EEPSEA since 2000 have given me the entry point to bring environmental economics to natural resources planning and management, particularly for issues that are related to biodiversity and coastal and marine resources.

On biodiversity

One organization, which has a keen interest in EEPSEA's work is ECOBEST (Enhancing the Economics of Biodiversity and Ecosystems Services in Thailand and Southeast Asia). In 2014, ECOBEST asked me to design a short training course on the economic concepts of payment for ecosystem services.

In response, I organized three training courses in Thailand's Chiang Mai, Phetchaburi and Trang provinces together with Phumsith Mahasuwerachai, another EEPSEA researcher. We trained some 90 participants from DNP, DMCR, BEDO, the Office of National Environmental Policy and Planning (ONEP), the Department of Town and Country Planning, and the Department of Fisheries.

The opportunity to provide inputs into decision-making came in 2014 when I was appointed as a member of the Working Group created by ONEP, which is responsible for making recommendations on appropriate economic instruments to support planning and management of biodiversity resources.

In mid-2015, I was recruited as the National Expert on Environmental Economics and Team Leader for the UNDP-GEF-funded Thailand Biodiversity Finance Initiative (BIOFIN). In this capacity, I am responsible for assessing Thailand's needs and financing gaps for biodiversity resources management as well as for designing the country's strategy for mobilizing public and private resources. Among the expectations is that I will provide technical backstopping for ONEP, which is the national contact point for the Convention on Biological Diversity (CBD). It is both a challenge and an honor to be in a position where I can bring environmental economics into the planning and decision making process.



Participants during one of the three training courses Orapan and Phumsith conducted for ECOBEST.

Thus, it is no longer valuation for the sake of valuation; it is valuation that feeds directly into the decision-making mechanism.

On coastal & marine resources

EEPSEA's cross-country project on marine turtle conservation was the main catalyst that linked EEPSEA and DMCR in 2007. From then on, EEPSEA, through me, has provided DMCR with technical assistance on the application of non-market valuation techniques to estimate the economic value of other keystone marine species and habitats.

In 2011, with the increasing cases of damages to coral reefs, mangroves, and sea grasses, and with DMCR being asked to provide "reference" values for determining the appropriate penalties on one hand and the appropriate level of pollution on the other, the agency again sought my help to conduct a review of court cases related to damages to the coastal and marine environment. My report, in addition to a study undertaken for the Ministry of Justice in 2009, is now widely circulated among justices and lawyers, within the Thailand Association of Lawyers, working on environmental cases.

In August 2011, DMCR invited EEPSEA researchers to present case studies at a national conference they organized to sensitize the 200 DMCR officers in attendance to the economic dimension of marine and coastal resources. Then, in 2013, EEPSEA partnered with DMCR in conducting a course for its officers working on corals, sea grass and mangrove ecosystems on how economic valuation can be used to estimate the value of ecosystem services.

By 2014, senior-ranking DMCR officials thought that it was about time for DMCR to start undertaking valuation studies themselves. Thus, during the agency's annual

conference, I was invited as a special guest to provide feedback and guidance on the research proposals developed by DMCR's in-house researchers that plan to use economic valuation.

Currently, I am assisting DMCR is conducting studies to estimate the use and non-use value of Bryde whales. The interest in these whales developed because of the emerging whale watching industry and because of the pressure that may arise from various land-based activities that might result in increasing the pollution concentration of coastal waters. The study will be conducted solely by a group of DMCR researchers with my technical assistance during research design.

Through the years of working with DMCR, I have been able to communicate and gradually create an acceptance of the concept of economic values of marine and coastal resources. In 2014, I was appointed as a member of the Working Group to Determine the Direction and Working Framework for DMCR. This has provided me with access into the institutional structure that is in a position to advocate the integration of the economic framework of analysis into the decision-making processes. Thus, at least with DMCR and for coastal and marine resources, it is no longer valuation for the sake of valuation; it is valuation that feeds directly into the decision-making mechanism.



Orapan with DMCR researchers during a field visit for the study on the use and non-use value of Bryde whales.



Part 2.

*Improved research
and teaching skills.
Wider professional network.
Key factor in professional
advancement.
Impetus to publish
and improve credentials.
The Program's grantees
report these as EEPSEA's
contribution to their
professional growth.*

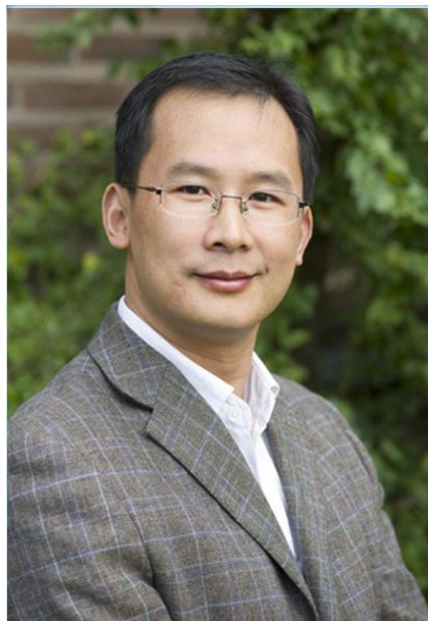
EEPSEA's main task is research capacity building. Its research grants program is recognized for its strong mentoring scheme. The Program's research grantees are not only given financial support but are also guided in the conduct of their study by eminent resource persons in the field of environmental and natural resource economics.

Complementing the Program's mentoring scheme are the training courses it conducts both for researchers and natural resource decisions makers and managers. These learning events focus on providing participants with tools and techniques in environmental and natural resource economics that are relevant to their line of work.

Improved environmental economics research and teaching skills. Wider professional network. Key factor in getting a scholarship or in getting promoted. Main impetus to publish and improve their credentials. EEPSEA's research and training alumni report these as the Program's contributions to their professional development. These, and more, are highlighted in the testimonials in this section.

Career development

Growing professionally



Dr. Zanxin Wang is a Professor at the Institute of Development Studies in China's Yunnan University.

My first participation in EEPSEA was during its course on advanced resource and environmental economics in 2006. Since then, I have completed two EEPSEA-funded research projects, one on the lifecycle environmental, economic and energy performance of *Jatropha* biodiesel, and another on the economic feasibility of utilizing water hyacinth for water purification and biogas production. I have an on-going EEPSEA project on the estimation of the external cost of photovoltaic oriented silicon production.

My successful implementation of EEPSEA projects enabled me to publish in good journals such as the *Journal of Biomass and Bioenergy*, and the *Journal of Environmental Management*. My EEPSEA research experience also helped me develop the Energy Economics Program for postgraduates at both the Masters and PhD levels at Yunnan University in 2013. I am now the main lecturer for the courses of environmental economics and energy economics at the university.

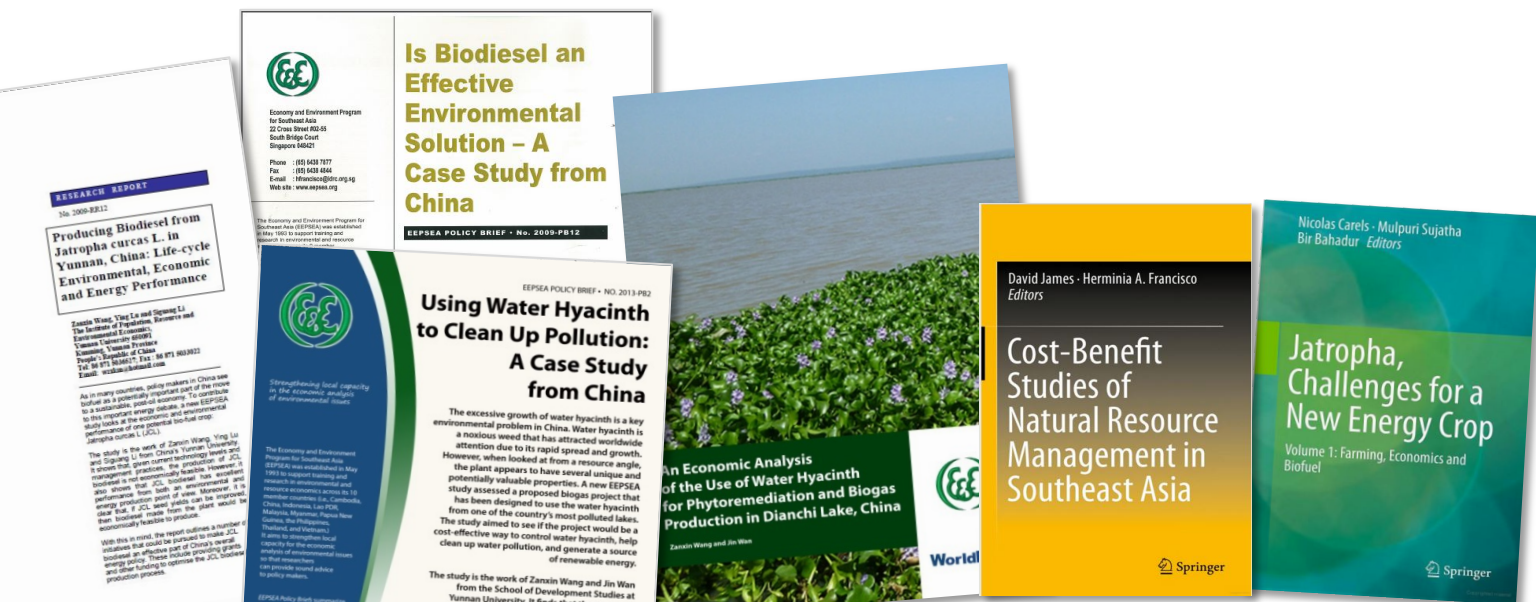
I became a lecturer at Jiangsu Polytechnic University six months after my first participation in an EEPSEA training course. I was then promoted to Associate Professor in 2008 after I completed my first EEPSEA project. I became a Professor in 2013 after I completed my second EEPSEA project. In 2009, I was appointed as the director of Yunnan University's Institute of Economic Studies.

I was gradually accepted by the international academia, with my EEPSEA projects being a significant factor. I was accepted as a guest researcher by the Beijer Institute of

**EEPSEA has been
a significant
driving force in
my professional
development.**

Ecological Economics in 2011. I have been invited to participate in many international conferences, such as the *2012 Conference on the Sustainable Development of Biofuel* in Bandung, Indonesia, ADB's 2012 *Pathway to Policy* conference, and the *2014 Annual Conference of the Australian Agricultural and Resource Economics Society*. I am now a paper reviewer of various international journals, such as the *Journal of Environment and Development*, *Bioresource Technology*, *Mountain Research and Development*, and the *Journal of Sustainable Development*.

The results of my two completed EEPSEA projects were used as inputs for decision making. In 2009, I was invited by the Yunnan Provincial Department of Science and Technology, and the Shenyu company, a Chinese biodiesel producer, to present the results of my EEPSEA project on the 3E performance of *Jatropha* biodiesel. In 2011, I contributed to the feasibility assessment of utilizing water hyacinth for water purification and biogas production. A project for the utilization of water hyacinth is now in progress in Dianchi lake, Kunming, China.



Becoming more effective



Mr. Chou Phanith is a lecturer and researcher at the Faculty of Development Studies, Royal University of Phnom Penh.

EEPSEA paved the way for me to become a more effective researcher and teacher. I participated in three advanced EEPSEA courses and was involved in two EEPSEA-funded research projects. I have used the concepts, methods, and materials from these in my own teaching. I have also shared them with my colleagues both at my university and from other institutions like the Royal University of Agriculture.

My EEPSEA research experience has enabled me to engage with other research and development institutions. Given my two EEPSEA research projects, I was able to receive research grants from the Greater Mekong Sub-region Tertiary Education Consortium Trust (GMSTEC), the International Crane Foundation (ICF), UNESCO, and ADB, among others. I am currently involved in a research project with WWF on *Forest Biodiversity and Related Ecosystem Services, particularly on Non-Timber Forest Products and Habitat Quality*. I am applying the methods that I learned from EEPSEA in this current research.

The knowledge I received from EEPSEA also enabled me to develop a proposal in applying for my PhD study. I was successfully granted a scholarship to continue my PhD in Environmental Economics at Nagoya University. I am truly grateful to EEPSEA for its efforts toward achieving its vision of improved research capacity in Southeast Asia.

Opening doors of opportunity



Dr. Jin Jianjun is an Associate Professor at the College of Resource Science and Technology, Beijing Normal University.

My involvement with EEPSEA started in 2004 when I was accepted as a participant of its *6th Regional Training Course on Environmental and Natural Resource Economics*. I learned a lot and started to get interested in the field. In May 2004, I attended EEPSEA's *Short Course on Contingent Valuation and Choice Modeling Methods*. After this course, I was lucky enough to be involved in the Program's cross-country study on endangered species conservation in Southeast Asia. It was through this research project that I finished my PhD dissertation and thereby earned my PhD degree in 2006.

In total, I have completed three EEPSEA-funded research projects. My successful implementation of these projects enabled me to publish papers in good international journals. Moreover, the research experience I have earned through EEPSEA led to my receiving got a research grant from the National Natural Science Foundation of China and another research project from the National Planning Office of Philosophy and Social Science of China.

My involvement in EEPSEA-funded research and training has also opened doors for me as a resource person and trainer. I was invited as a resource person in the *1st EEPSEA-China National Training Course for Environmental Economics Teachers*. I also served as an EEPSEA resource person and provided guidance in the implementation of two small research grants. Both were successfully completed with one having been published in *Energy Policy*, a top journal in the field of management sciences, and the other published in *China Agricultural Economics Review*.

Expanding my horizons



Dr. Rawadee Jarungrattanapong (right) with Dr. Therese Lindahl during the field experiment in Phuket, Thailand. Rawadee is an academic staff at Sukhothai Thammathirat University's School of Economics.

My first involvement with EEPSEA was in 2004, when I attended its *6th Regional Training Course on Environmental and Natural Resource Economics*. It resulted in my receiving my first EEPSEA research grant to implement my project on *Adaptation Strategies to Address Coastal Erosion/Flooding: A Case Study of Communities in Bang Khun Thian District, Bangkok, Thailand*. That was my first time to serve as a project leader and it allowed me to learn many things on how to do research, with guidance from an EEPSEA resource person. In 2009, I applied for the PhD program at Ritsumeikan Asia Pacific University in Japan and got accepted. My EEPSEA project was one of the key factors in my acceptance.

Because of my EEPSEA research projects, I have been invited to present my work in many international conferences such as the *2nd International Conference on Climate Change: Impacts and Responses* (2010), the *2014 World Congress of Environmental and Resource Economists*, the *2014 Congress of the East Asian Association of Environmental and Resource Economics*, and the *2015 Annual Conference of the European Association of Environmental and Resource Economists*. Through these presentations, I have not only learned how to present my findings at professional conferences but also widened my international network.

My latest EEPSEA research project on *Altruism, Cooperation, and Trust: Other-regarding Behavior and Collective Actions in Thailand*, together with a glowing recommendation from EEPSEA Director Dr. Herminia

Francisco, paved the way towards my being accepted in 2013 for the Mäler Scholarship in Environmental Economics of the Beijer Institute of Ecological Economics. It was a great opportunity for me to work with Dr. Therese Lindahl, an expert in experimental and behavioral economics.

During my time at Beijer, Dr. Therese also invited me to be part of her research team on her project *How do people respond to abrupt ecosystem changes? Using behavioral laboratory and field experiments to explore social-ecological linkages in common-pool resource systems*. The project aims to test and map the impact of potential ecosystem regime shifts on the management of common-pool resources and determine how different aspects of uncertainty affect the outcomes. We have already conducted the field experiments in the fishery communities in Phuket province, for which I am responsible for. The field experiment in Columbia will be conducted in 2016. The results of the field experiments for both sites will be compared with the results of laboratory experiments performed in Sweden.



Rawadee explaining the mechanics of the field experiment to fishing community representatives in Phuket, Thailand.

Proud to be an EEPSEA “product”



Mr. Zhaoyang Liu is a fourth year PhD candidate at the University of Cambridge.

I owe my early career development to EEPSEA, which has walked me through the turn from an undergraduate with an environmental science background to a young researcher in environmental economics.

I started my incredible journey with EEPSEA in 2010 when I attend its *9th Regional Training Course on Environmental and Natural Resource Economics*. The course was particularly beneficial for me since at that time I had determined to develop an academic career in environmental economics, but with my undergraduate degree in environmental science, my economics training was, if any, considerably thin. EEPSEA designed the training course in such a way that it suited participants from various disciplinary backgrounds at different career stages. The training course ushered me into the world of environmental economics as well as into the EEPSEA family.

The story continued with my first EEPSEA-funded research project on the co-control policies of carbon dioxide and local air pollutants in China's iron and steel industry. It was a challenging yet exciting experience for me as a Master student to undertake an independent research project, which could not have been so successfully completed without the technical and financial support from the EEPSEA family, especially Dr. David James and Dr. Herminia Francisco. This project led to a research article published by the *Journal of Environmental Management*, which is my first publication as leading author in quality international journals.

***Being labelled as an
EEPSEA “product” is
something I will always be
proud of and I am keen to
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worth everything EEPSEA
has invested in me.***

Later, when I applied for my PhD degree, Dr. James provided me with several reference letters, which were instrumental for me to grab a seat at Cambridge. It was later revealed to me by my PhD supervisor that my EEPSEA research project was one of the highlights in my application.

After launching my PhD research, I was awarded a PhD research grant by EEPSEA to support my fieldwork. Prof. Nancy Olewiler and Prof. Jintao Xu joined the ‘EEPSEA parenting team’ of my project, who made their best effort to curb the risks I could have encountered in the field. The outputs of this research project constitute a substantial part of my PhD thesis, and are currently under review with leading academic journals. This project also brought me into the Environment for Development (EfD) network, which eventually secured me a post-doctoral appointment as research fellow on the Ecosystem Service Accounting for Development (ESAfD) project jointly initiated by the World Bank, the Swedish Environmental Protection Agency, and EfD.

Until now, EEPSEA has played an indispensable role in my professional development as an environmental economist. Being labelled as an EEPSEA “product” is something I will always be proud of and I am keen to develop an academic career worth everything EEPSEA has invested in me.



Gansu, China was among the study sites of Liu's dissertation grant on the analysis of livelihood and conservation impacts of forestland tenure reform. Photo by Gill Penney under creative commons license at flickr.com

Enriching my skills



Dr. Nguyen Mau Dung (right) is an Associate Professor at Vietnam National University of Agriculture's Faculty of Economics and Rural Development.

I am very lucky to have participated in EEPSEA's 2005 *Training Course for Environmental Economics Teachers in Vietnam* and in the 2006 *Regional Course on Advanced Resource and Environmental Economics*. Apart from these trainings, EEPSEA has awarded me three research grants: one on the pollution from handicraft villages (2007); another on environmental compliance of papermaking firms (2009); and the last on river sand mining (2011).

These training and research opportunities have helped a lot in enriching my environmental economics research and teaching skills. My EEPSEA experiences have enabled me to write an environmental economics textbook for undergraduate students here in Vietnam as well as to publish papers in respected local and international academic journals. I was also involved in designing the curriculum framework for the Natural Resource Economics program in Vietnam. I am now one of the main environmental economics lecturers in my university and, in 2012, I was promoted as the head of my university's Resource and Environmental Economics Department.

My EEPSEA training has also been instrumental in my being accepted as a visiting scholar at the University of Sydney's Department of Agricultural and Resource Economics in 2008 and at the

EEPSEA's training and research opportunities have helped a lot in enriching my environmental economics research and teaching skills.



The wastewater pollution created through cassava starch processing in handicraft villages was the focus of Dung's first EEPSEA research project.

Photo by Neil Palmer (CIAT) under creative commons license at flickr.com

University of Wisconsin-Madison's Department of Agricultural Economics in 2011. These opportunities have further enriched my knowledge in my chosen field.

My involvement with EEPSEA has also opened doors for me to collaborate with other agencies in doing work related to environmental and natural resources management. I was invited as a consultant on biodiversity conservation in national parks in Vietnam by the Institute of Environmental Management Science in 2012. In 2013, I was part of the team that studied the revolving fund for sewerage connection in Binh Duong and Vinh Phuc provinces, which was funded by JICA through the International Centre for Environmental Management. In 2014, Cao Nguyen Xanh Company invited me as a trainer on the application of cost-benefit analysis in cocoa production. In 2015, the International Maize and Wheat Improvement Center (CIMMYT) invited me as a consultant for a study on maize varieties.

In addition, given my strong experience in research proposal writing and in conducting research, which I learned from EEPSEA, I have received funds from other research granting institutions such as the Sumitomo Foundation, the Swedish International Development Cooperation Agency's Department for Research Cooperation (Sida-SAREC), and the East Asian Development Network (EADN), among others.

Enhancing my academic career



Mr. Sopheak Kong is a researcher at Royal University of Phnom Penh's Faculty of Development Studies.

My EEPSEA involvement has greatly enhanced my knowledge in environmental economics. Since 2011, EEPSEA has supported my participation in its courses on various economic methods such as valuation, risk cost-benefit analysis (CBA), value transfer, spatial modeling, and quasi-experimental evaluation methods. The training support greatly helped in the conduct of my 2014 EEPSEA project on the *Estimation of Production Function for Fisheries in Peam Krasaob Wildlife Sanctuary, Koh Kong Province, Cambodia*. I also learned a lot from the guidance I received from my EEPSEA mentors. Currently, I have an ongoing EEPSEA project that aims to assess the impact of community fishery and marketing integration on Tonle Sap fishermen's income.

EEPSEA has also enhanced my academic career. Using the knowledge I have gained from EEPSEA, I was able to work as a consultant in various projects such as the Water and Sanitation Program of World Bank-Cambodia, the economic valuation of non-timber forest products in Mondulakiri Province, socio-economic impact assessment and CBA for several local environmental impact assessment companies, and on an EU-funded project on reducing plastic bag use in major Cambodian cities. Most importantly, in 2015, I was promoted as visiting lecturer on environmental economics to undergraduate students of the famous Department of International Studies of the Institute of Foreign Language in Cambodia. I very much appreciate EEPSEA's capacity building program and I hope that EEPSEA will continue to produce more good "seeds" in the area of environmental economics.

Learning new things



Ms. Suparee Boonmanunt (right) with a local of Nakhon Si Thammarat province, Thailand during a field experiment for her dissertation. Suparee is a PhD candidate at Germany's University of Cologne.

I first learned of EEPSEA in 2011 through my involvement in Rawadee Jarungrattanapong's research project, which used experimental economics to study coastal conservation in Thailand. This opportunity gave me my first experience with economic lab-in-the-field experiments; it also gave me the confidence to do research in this area.

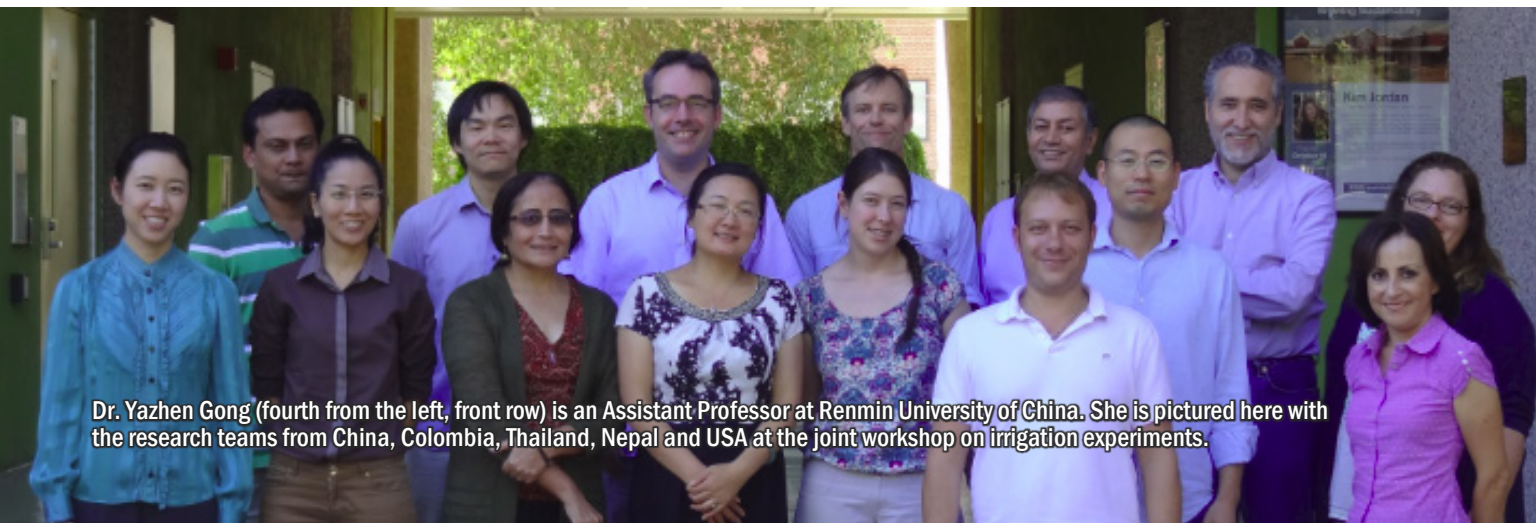
In 2004, I had a chance to participate in an EEPSEA workshop on experimental methods for environmental and resource economics. After the course, I received an EEPSEA grant to conduct my PhD dissertation, which investigates the relationship between patience and conservation decisions, as well as looks at whether people are more patient when salient group membership is introduced. The paper from this dissertation grant brought me to my first international conference, the *Symposium on Economic Experiments in Developing Countries* in Prague in December 2015. I am currently writing up this paper to submit to peer-reviewed journals.

I also participated in EEPSEA's *11th Regional Training Course on Environmental and Resource Economics* in 2015. I learned a lot of new interesting things from the prominent professors who served as resource persons in this course. The course expanded my knowledge as the instructors provided us not only with new information but also with relevant teaching methods, which I can use when I teach environmental and resource economics in the future.

Developing my academic life

The door to my academic life was opened when I participated in EEPSEA's *3rd Regional Training Course in Environmental and Natural Resource Economics* in 2001. It led to my receiving EEPSEA research funding in 2002 to conduct an economic valuation of biodiversity conservation in a national nature reserve in China. In 2008, while I was a PhD candidate at the University of British Columbia, I received EEPSEA doctoral field research funding to conduct one of the first field experiments in China. This EEPSEA project produced a paper published in *Ecological Economics*, a paper accepted in *Agricultural Economics*, and a paper under revision and resubmission in *Comparative Economics*. In 2011, I again received research funding from EEPSEA to conduct a joint research with researchers from the South Asian Network for Development and Environmental Economics (SANDEE), which aimed to analyze the impact of climate change on migration in China, Philippines, India, and Pakistan.

With tremendous support from EEPSEA, I have grown to become a researcher with strong collaborations with leading international scholars. In 2013, I received funding from China's National Science Foundation (NSF) to conduct field experiments on irrigation water use in China. This project is linked to a US NSF Project, which involves a research team from Arizona State University and a leading field experimentalist from Colombia, Juan Camilo Cardenas. Under these two NSF joint projects, we conducted irrigation experiments with 2,146 participants from four countries (i.e., China, Colombia, Nepal and Thailand). We have robust findings that indicate that the increasing integration of smallholder agricultural systems with



Dr. Yazhen Gong (fourth from the left, front row) is an Assistant Professor at Renmin University of China. She is pictured here with the research teams from China, Colombia, Thailand, Nepal and USA at the joint workshop on irrigation experiments.

With tremendous support from EEPSEA, I have grown to become a researcher with strong collaborations with leading international scholars.

the global community is associated with lower investments in public goods. Our findings suggest that food security may be negatively affected by globalization and climate change. We are now preparing a manuscript for possible publication in an internationally-recognized journal.

From 2014 to 2015, I received a scholarship from China Scholarship Foundation to visit the University of California at Berkeley. During my visit, I developed a joint publication with my host professor on climate change policies and the carbon market in China, which was published in the *Annual Review of Resource Economics*. We are now working on another paper on the impact of climate change on China's agriculture.

I am greatly indebted to EEPSEA for helping open doors for me. The EEPSEA spirit is deeply rooted in my heart and I hope to work hand in hand with other EEPSEA alumni in carrying on EEPSEA's mission in our respective countries.



China's Shaanxi province was among the study sites in Gong's EEPSEA research on estimating the impact of weather shocks on agricultural production and migration in China.
Photo by Jim Richardson under creative commons license at flickr.com

My career's foundation

In 2005, I was one of the novice EEPSEA researchers invited to be a part of a cross-country research project on endangered species conservation. The training I got from my mentors and the support of my peers not only ignited my interest in the application of the Contingent Valuation Method (CVM) but also honed my research skills, including survey design and implementation.

My EEPSEA research involvement was rewarding. In 2006, I was given the opportunity to present our research findings at international conferences such as the *World Congress of Environmental and Resource Economists* and that hosted by the *International Society of Ecological Economics*. From there, our research team was able to come up with international journal publications and two book publications on endangered species conservation. Though I did not do another research project with the Program, I kept my ties with EEPSEA by serving as a local resource person on CVM in its capacity building initiatives in the Philippines.

Ms. Dieldre Harder (far left, standing) is a consultant for the Resources, Environment and Economics Center for Studies, Inc. She is pictured here with other members of the Economy and Environment Group - Philippines.



***EEPSEA has left
an indelible
mark in the way
I do research...it
became one of
the foundations
on which I've
built my career.***

The exposure I received from EEPSEA opened opportunities for me to be involved in the consulting business. I was able to use my training in CVM as I conducted willingness-to-pay studies on water and sanitation services in the Philippines and in Indonesia, which were funded by the World Bank Water and Sanitation Program (WSP). I was able to present the results to various stakeholders including local government units, the academe, and the private sector through policy dialogues, workshops and forums. One of these studies was published in the *Journal of Water, Sanitation and Hygiene for Development* in 2013 and some of the findings served as an input to the Septage Management Program of Dagupan City, Philippines.

I learned from my EEPSEA experience that research is more than coming up with numbers; it is getting the numbers right. The academic rigor in the design, implementation and analysis of field surveys became an integral part of my discipline as a researcher.

Hence, after my involvement with EEPSEA, I managed several projects in the water and sanitation sector that involved nationwide surveys using the tools I learned from the Program. Some of these projects informed policy and subsequent program design. Output from our research on the *Economic Assessment of Sanitation Interventions in the Philippines* was widely used to inform policymakers and relevant stakeholders of the cost of poor sanitation in the country and to leverage support for the sector. Also, our formative research on *Scaling-up Demand and Supply for Rural Sanitation* became a platform in developing strategies to help the poorest of the poor build safe and affordable toilet facilities. Findings from this research also helped WSP develop its Behavior Change Campaign material, which is now part of the Enhanced Family Development Session module of the Pantawid Pamilyang Pilipino Program, a poverty reduction strategy of the Philippine national government that provides conditional cash grants for the poor to improve their health, nutrition and their children's education.

Looking back, EEPSEA has left an indelible mark in the way I do research. Over the years, it became one of the foundations on which I've built my career. In EEPSEA, research is more than acquiring new knowledge—it is transforming such knowledge in a way that will benefit not only individuals but communities and societies as a whole.

From applicant to researcher



Ms. Le Ha Thanh is a lecturer at the Faculty of Environmental, Natural Resource and Urban Economics and Management in Hanoi National Economics University.

In 2006, I decided to apply for the EEPSEA *Advanced Regional Training Course on Environmental and Natural Resources Economics*. The road to be accepted as a participant was not easy—the requirements were tough and the competition was high. But it has since opened so many wonderful doors of opportunity for my growth, both as a person and as an expert.

Through the EEPSEA courses I have attended, I have had the chance to study various tools used in environmental economics analysis. I have learned a lot about innovative research methodology. The courses helped me improve my understanding of the application of environmental economics principles. These lessons were further reinforced by the work I did for the EEPSEA research grants I received.

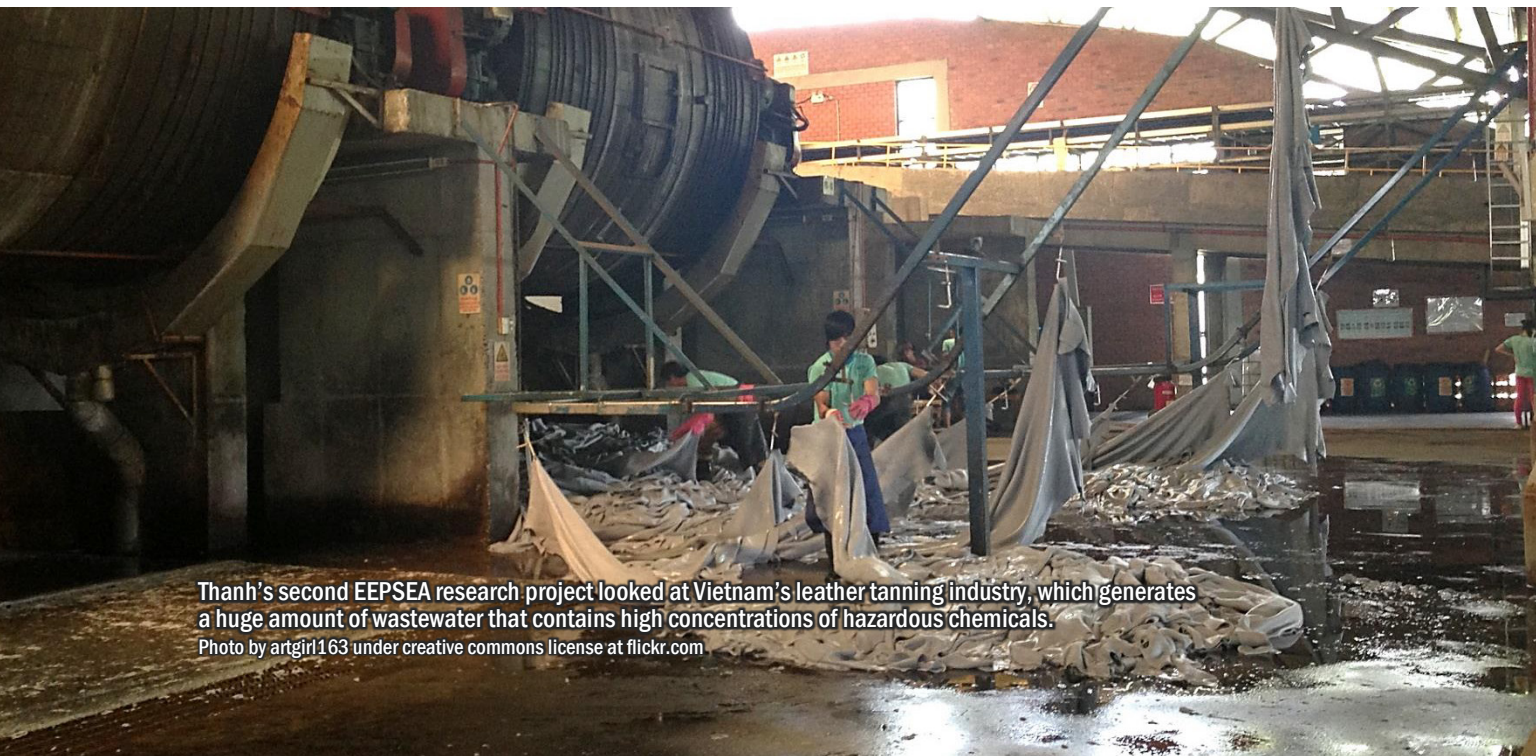
My first EEPSEA paper on Vietnam's industrial pollution charges was recognized by officials from the Ministry of Natural Resources and Environment as among the very limited number of research studies on the country's industrial water fee. Because of this study, I was invited to be an environmental economics expert in revising the government wastewater fee policy.

When I finished my second EEPSEA research project on *Greening the Leather Tanning Industry in Vietnam* in 2010, and because of my experience in EEPSEA research, I was invited to become a UN Industrial Development Organization (UNIDO) and UN Development Programme (UNDP) expert on environmental issues.

***Because of my
EEPSEA study,
I was invited to be
an environmental
economics expert
in revising the
government
wastewater fee
policy.***

My EEPSEA projects were also instrumental in my being gradually accepted by the international academia. I was accepted as a visiting scholar by Saint Mary's University in Canada and Cranfield University in the UK. In 2009, thanks to the EEPSEA network, I had the chance to join Cornell University's training course on food policy, where I was invited to write a case study for Cornell University on *Food and Sanitation Issues in Vietnam*. I have also been invited to participate in various international conferences, such as the *2010 International Society of Markets and Development (ISMD)* conference and the *2012 European Association of Environmental and Resource Economists (EAERE)* conference.

EEPSEA has had a great influence on my professional career. It is my honor to be a member of the EEPSEA family.



Thanh's second EEPSEA research project looked at Vietnam's leather tanning industry, which generates a huge amount of wastewater that contains high concentrations of hazardous chemicals.

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Part 3. Alumni's

EEPSEA alumni have become the Program's extensions in terms of building local environmental economics research capacity. This is the ultimate validation of EEPSEA's success in the region.

Most of EEPSEA's research and training grantees are university-based lecturers for a reason. Building the capacity of educators ensures a multiplier effect—that they in turn will mentor others using what they have learned from conducting EEPSEA research projects and attending its training courses. The Program banks on this multiplier effect to spread its advocacy of using sound economics research to ensure that environmental concerns are given as much attention as the achievement of economic goals.

The stories in this section reveal how EEPSEA alumni have internalized the value of knowledge sharing. They have become the Program's extensions in terms of building local environmental economics research capacity. This is the ultimate validation of EEPSEA's success in the region.

influence on others

Sharing my knowledge



Dr. Nyda Chhinh is a lecturer at the Royal University of Phnom Penh.

The training I received from EEPSEA has changed my life. It enabled me to develop a research proposal, write journal articles and a book chapter, receive a grant for a major research project, receive a PhD scholarship, and write my PhD dissertation. The skills I needed to do all these things were honed through the EEPSEA local and regional training courses that I attended, the feedback and mentoring I received in conducting my EEPSEA research projects, and through my interaction with other EEPSEA alumni.

After receiving my Master of Environmental Management degree in 2006, I still felt that my knowledge and skills in environmental economics were limited, and I could hardly write a research proposal. After joining EEPSEA's environmental economics training in 2007, I developed my proposal on the cost-benefit analysis of small-scale plantations in Cambodia. I revised this proposal based on feedback I received through multiple correspondences with EEPSEA resource persons and was eventually awarded a research grant. I considered winning the grant a great success but even more valuable than this was the mentoring I received while conducting the research.

My increased research capacity enabled me to win another EEPSEA research grant in 2008. The grant was part of a cross-country EEPSEA project on climate change vulnerability mapping and cost-benefit analysis to identify appropriate adaptation measures. This grant enabled me to work with other researchers from Vietnam and the Philippines.

***The main wisdom that I got
from EEPSEA is that
knowledge is for sharing.***



The main gate of Kvit Reservoir in Kampong Speu province, Cambodia. The reservoir was the focus of Nyda's climate change adaptation research project with EEPSEA.

It was also through this research project that I was able to write papers for peer-reviewed journals. I also largely attribute my acceptance to a PhD scholarship in Australia's Flinders University to EEPSEA's influence on my research capacity.

The main wisdom that I got from EEPSEA is that knowledge is for sharing. Because of the knowledge shared to me by EEPSEA resource persons and alumni, I too wanted to share this knowledge to my students and friends. Hence, I translated selected environmental economics teaching materials to Khmer. These are now being used by many universities in Cambodia. Also, through my EEPSEA training, I was able to fill the lack of an environmental economics lecturer at my university. As the new lecturer of my university's undergraduate and graduate environmental economics courses, I also revised their syllabus.

I also involved two of my students and two lecturers from my department in the conduct of my 2008 EEPSEA research project. The experience allowed them to gain greater knowledge on environmental economics. Each of them was able to receive their own research grants from EEPSEA in the following years.

Passing on what I learned



Dr. Rodello F. Subade is a Professor at the University of the Philippines Visayas.

Since I participated in the 1998 EEPSEA *Regional Training Course on Environmental and Natural Resource Economics*, there have been significant changes in my life, and my professional development has been provided well-advised direction. The inputs from that training inspired me to pursue my PhD studies, for which the dissertation was supported by EEPSEA. After my PhD, EEPSEA included me in various trainings and meetings, as well as provided me with research funding support for five projects.

I now pass on to my students the various “learnings” I have gained through EEPSEA—from its courses and the field experiences and mentoring received during my EEPSEA projects. I learned from EEPSEA the importance of choosing a research topic that is doable and that will use specific methods, aside from considering its policy application. This I also pass on to my students in mentoring them for their research papers or theses.

EEPSEA’s advocacy of knowledge sharing has become part of my mentoring, and one way I do this is by encouraging my research advisees to present their papers in conferences. One of my thesis advisees not only got to present her paper in a national conference but was also able to publish it in a peer-reviewed national journal, which now has several citations. In October and November 2015, I was again able to bring several students to two national conferences wherein they presented their papers.

I have also translated what I have learned from EEPSEA into courses that I designed for my university's Masters programs: *MMA 214: Economic Valuation of Marine and Aquatic Resources* and *THEM 202: Dynamics of Social-Ecological Systems*, which has one module on economic valuation. I have also designed courses for the undergraduate degree program: *ECON 172: Environment and Natural Resource Economics* and *ECON 177: Economic Valuation of Environment and Natural Systems*. These courses include references and materials from EEPSEA courses I attended.

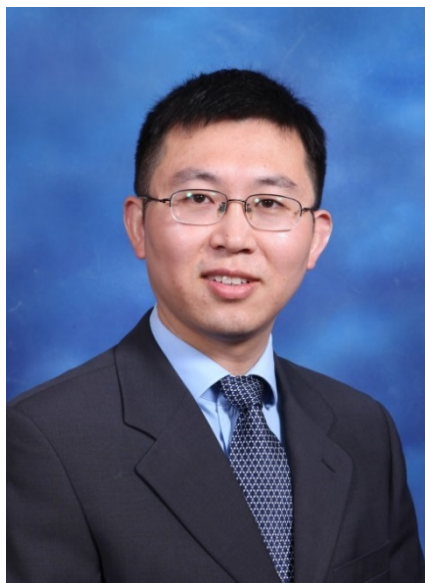
My EEPSEA studies have also been used to inform policy and decision making. My EEPSEA-funded dissertation on valuing biodiversity conservation in Tubbataha Reefs was among those that informed the drafting a Republic Act that supported its expansion, structure and regular funding allocation. In 2013, this study was also among those that informed how to compute for the damage cost resulting from the grounding of the USS Guardian. Also, the results of my EEPSEA-funded study on the NPC Power Barge 103 oil spill offshore of Semirara Island was used by the Antique provincial government in securing compensation for the affected families. This oil spill and the Solar-1 Guimaras oil spill study (also EEPSEA-funded) brought me to two joint-congressional hearings as a resource person.

Indeed I would not have achieved what I have now had it not been for EEPSEA. I am not sure where I would be without EEPSEA's support. But with its provisions, equipping and guidance, I am now where I am.



Cheryl Fernandez (standing, second from the right), one of Rodel's thesis advisees, during one of EEPSEA's training courses. A journal article from Cheryl's undergraduate thesis was later published in a peer-reviewed national journal.

Influencing students & policy formulation

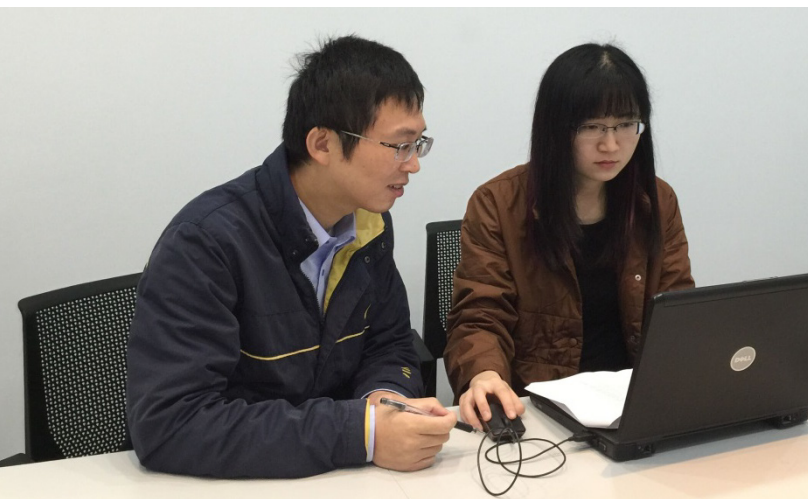


Dr. Haitao Yin is an Associate Professor at the AnTai College of Economics and Management, Shanghai Jiaotong University in China.

I have learned two things from my EEPSEA training: environmental economics research methodologies and the philosophy of learning by doing. These have not only helped me grow professionally faster and better—they have also helped me become a more effective teacher.

My EEPSEA studies have utilized methodologies that evaluate environmental benefits or costs, specifically Contingent Valuation Survey and Choice Experiment. Through these studies, I have gained a much better understanding of these methods, which has given me the confidence to include them in my teaching syllabus. My hands-on experience also enables me to give my students a very detailed explanation of these methods. One of my doctoral students learned the method of choice experiment from me and used it to study consumers' willingness to pay for Alternative Fuel Vehicle (AFV) in China. Her study is very successful and offers new observations on China's AFV markets in a systematic manner.

Through my EEPSEA studies, I also found that the philosophy of learning by doing is the most effective way of teaching and learning. I now implement this in my own teaching. I ask my students to pick a topic that interests them at the beginning of the semester and then they carry out the study over the whole semester. Like with the EEPSEA mentoring scheme, I provide them with critical comments and guidance on their chosen study throughout the semester. I have found this to be a very effective way of cultivating students' research capacity.



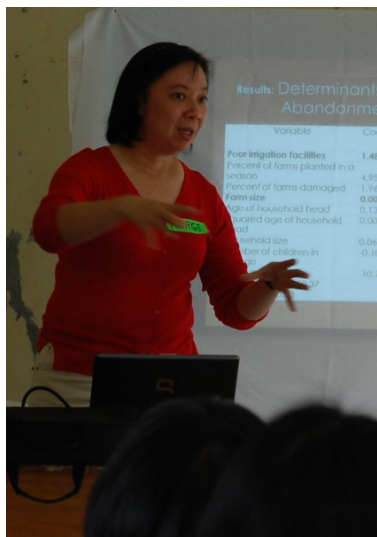
***I learned through EEPSEA
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My EEPSEA research findings have also been used to inform policy. During data gathering for my EEPSEA project on *Protecting the Environment by Informing Customers in China*, our research team initiated discussions with officials from the China National Institute of Standardization, which plays an active role in policy formulation, implementation and research. We formed a research partnership with them as a result. The results of our research were shared during the Institute's conference to celebrate the tenth anniversary of the establishment of the China Energy Efficiency Label.

The Institute also invited my research team to participate in its study on the subsidy for energy-saving home appliances. This partnership will serve as an avenue for my team's research to inform the next round of policy reforms.

I have also been invited by the China National Natural Science Foundation to submit a proposal on *Environmental Information Management and Policy in China* as a result of my EEPSEA study. This proposal has been approved and funded.

Empowering researchers to empower others



Dr. Margaret M. Calderon is a Professor at the University of the Philippines' Institute of Renewable Natural Resources.

The first EEPSEA event I attended was the *5th Regional Training Course in Environmental and Resource Economics* held in April 2002. A year after, my proposal on the *Improved Management of the Angat, Ipo, Umiray and La Mesa Watersheds in Luzon, the Philippines: A Contingent Valuation Study* was approved for funding.

Through the years, I was involved in five more EEPSEA research projects and, in all these, one thing was evident: EEPSEA's mission to capacitate researchers was not a one-shot deal. We had high-caliber resource persons who helped us improve the technical soundness and policy relevance of our proposals and who guided us in the proper implementation of our projects. We were always asked the basics: *What's the problem that you want to address? How will this help others? What is the policy relevance?* And now, whenever I think of a research idea or discuss research ideas with students and colleagues, I also ask the same questions. Certainly, resources for research are scarce; they should be used where they will make a difference.

EEPSEA allowed me to work with multi-disciplinary teams and young faculty members. Our research problems were usually complex and required expertise beyond what I, as a forestry economist, could provide. We learned from and built on each other's strengths. We trained our undergraduate students to serve as enumerators in our surveys and made it a point to hold regular feedback sessions to commend good practices and call attention to areas that need improvement. Some of them are now doing research, and have expressed their appreciation for the training they obtained from our EEPSEA projects.

EEPSEA brought me to Ifugao and its beautiful rice terraces, and provided me with the opportunity to work with her people in developing a financing mechanism to conserve the Ifugao Rice Terraces. EEPSEA introduced me to the Magbukun Ayta of Morong, Bataan, with whom we worked to develop a forestry carbon project. In these projects, we used participatory approaches to identify problems and possible solutions, and offered to supplement their rich indigenous knowledge with GIS and other tools. In effect, the people were not the subject of our research; they were our partners in research.

And being in the teaching profession, my instruction materials have been enriched by my research and professional experience. Students become more engaged in discussions whenever I supplement theory with experience, because they realize that these indeed have real-life applications.

EEPSEA has greatly contributed to my role as a faculty member of the University of the Philippines Los Baños in performing its functions of instruction, research and extension. One proud and grateful EEPSEA alumna here!



Marge and the rest of the research team with Aytas of Morong, Bataan showing their output during the community mapping exercise of their EEPSEA project.

Contributing to society



Dr. Mohd Shahwahid Haji Othman is the former Dean (March 2012 – February 2015) of Universiti Putra Malaysia's Faculty of Economics and Management.

EEPSEA's influence on me has been tremendous. In the 1990s, I experienced a shift in research specialization focus from economics of forest resource and wood-based industry to the wider issues in environmental economics. I was able to create a niche in the area of economic valuation and community-based natural resource management that opened doors for me in terms of consultation opportunities, greater research and development funding opportunities, and invitations to serve in government advisory panels.

My experiences in attending the EEPSEA biannual research proposal evaluation process and its research methodology courses has provided me with the groundwork to share what I know with other researchers through several courses. Moreover, as an academician, I have been invited to give keynote talks to government departments and universities. The latest was in November 2015 wherein I talked about economic valuation research and its role in conservation decision making in marine-related environments in Malaysia and selected Asia-Pacific countries at the *International Seminar on the Straits of Malacca and South China Sea* organized by Universiti Malaysia Terengganu.

From my experiences in conducting EEPSEA-funded research in 1995-2000, as well as a series of economic valuation exercises on the haze incidents in Malaysia (1997, 2010 and 2013), EEPSEA has provided me with the foundation to contribute to society, like in my involvement

EEPSEA has provided me with the foundation to contribute to society, like in my involvement in the project on the socio-economics of wild honey collection.



in the research project on the socio-economics of wild honey collection at Muda and Pedu Forest Reserves.

Wild honey collection activity is very risky involving climbing up Tualang trees, said to be the tallest tree in Peninsular Malaysian forests. Moreover, honey collection is seasonal. In a year, honey collectors would climb an average of five trees, giving an annual income of MYR 5,000 to MYR 10,000 per person. Since honey collecting is normally their main source of income, the collectors have to find odd jobs to meet their household needs throughout the year. Yet with the irregular climatic pattern, especially with the haze, honey bee colonies do not find their way back to the Tualang trees in some years.

Wild honey collection of *Apis dorsata* bees is a heritage practice that should be conserved. Continuing this practice along with other non-destructive uses of the tropical rainforest will further continue the conservation of forest reserves for their non-timber forest produce.

Hence, in 2014, I obtained a Knowledge Transfer Program grant from the Ministry of Higher Education to train and financially support a team of wild honey collectors to become *Trigona sp.* apiculturists, raising bees in boxes in gardens with flowering trees and bushes. Participants of this project are immensely grateful. To quote one of the newly trained apiculturists, “*Ever since participating in kelulut (stingless honey bee) rearing, we can now harvest honey regularly and earn steady monthly incomes. This is so meaningful as now we can plan our lives better, unlike before. We are so thankful to UPM academia and to Prof. Shah for transferring this knowledge and creating this business opportunity for us*”.

Influencing environmental adjudication



Dr. Orapan Nabangchang is an Associate Professor of Economics in Thailand's Sukhothai Thammathirat Open University, EEPSEA's Deputy Director for Training and Partnership, and the Director of the Economy and Environment Institute - Lower Mekong Sub-region.

One area where EEPSEA's work can be considered as pioneering has been to establish a link between environmental economics and the judiciary system for cases related to the environment. What started off as a small study for the Rabibhadanasak Judicial Research Institute, the Ministry of Justice where I was asked to document landmark court cases concerning harm to the environment and natural resources in the USA and Europe, led to a series of training courses offered by EEPSEA.

Among the first was the jointly organized course with the Asian Environmental Compliance and Enforcement Network (AECEN) in Bali in 2008. This was followed in 2010 by the in-country training in Hua Hin, Thailand, with around 25 justices from the Administrative Court, the Supreme Court, and the Court of Justice.

In December 2014, EEPSEA offered the *Regional Course on Economic Values, Compensation and the Environment* in Bali, Indonesia. This course was facilitated by Dr. Benoit Laplante and Chief Justice Brian Preston of the Australian Land and Environmental Court. Participants included 25 justices from Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines and Thailand.

In 2015, EEPSEA and the Office of Healthy Society hosted a second in-country training course for Thailand justices. This course was attended by justices from the Preliminary Court, Supreme Court, Civil Court, and Administrative Court, among many others.

***In the future,
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The interest in the economic assessment of natural resource damages has now spread to the Association of Thai Lawyers and I have been invited to two of the annual training events they organize.

At this stage, EEPSEA is well recognized by the justices representing the courts who have participated in our trainings. In the future, there is likely to be greater collaboration between other players in the environmental judiciary process. This is because not only are we communicating the principles and tools of economic valuation but we are also stimulating discussion on how to incorporate these concepts into existing environmental laws. These existing laws are lacking as they merely provide a broader principle that polluters should be responsible for the harm done to the environment and the injured party should be compensated.

Whereas before, lawsuits claiming compensation for damages to the environment and human health have not been based on any systematic approach in the calculation of economic losses, now we are offering tools to estimate the value of natural resource damage as well as a link to a network of environmental economists in this region.



Participants of the training course for Thai justices jointly organized by EEPSEA and the Office of Healthy Society in 2015.

Passing on EEPSEA's knowledge-sharing culture

I have always treasured the unique and 'culture'-changing mind-set that I have acquired in all the various opportunities of being trained by EEPSEA's finest and brightest. The least I can do is to pass on what I call the **three I's** of EEPSEA's knowledge-sharing culture.

EEPSEA's knowledge-sharing culture is **inclusive**. I attended the *2nd Regional Training Course on Environmental and Natural Resource Economics* in 1998, but my background in environmental economics was zero. I learned so much from the five weeks of lectures but I was pretty sure that my research proposal did not quite reflect this. So I anticipated some 'beating' come presentation time. To my surprise, I did not get any. On the contrary, I received comments of encouragement and genuine concern on how I can further improve my work. Hearing this from accomplished mentors like David Glover, Herminia Francisco, David James, Benoit Laplante, and Nancy Olewiler created such a profound impact because, as a neophyte researcher, I did not feel embarrassed to bare my ignorance.

This certainly paved the way for me to learn more. I have since tried to adopt this all-inclusive culture of selfless sharing of knowledge, expertise, and presentation materials to my students,

Fresh Air In, Bad Fumes Out: Reducing Air Pollution in Baguio CBD

by ACHILLES COSTALES, University of the Philippines Baguio
and MARIA ANGELES CATELO, University of the Philippines Los Baños

Chronic exposure of people to high concentrations of air pollution exacts adverse impacts on human health—triggering particular respiratory and cardiovascular symptoms. In Baguio City, diesel fumes from PUVs and taxis were identified as the main generators of the air pollutant PM_{10} , and of the even more hazardous finer particulate $PM_{2.5}$. This study estimated health impacts using health-risk coefficients of air pollution exposure on particular diseases. On average, around 14 percent of the population in Baguio City is exposed to high concentrations of air pollution. The direct and indirect costs of air pollution amounted to around PHP 24 million per annum. The study asserts that public policy interventions that work to substantially reduce the PM_{10} (and $PM_{2.5}$) levels in the CBD will have the impact of



Prof. Maria Angeles O. Catelo (left) with Dr. Achilles Costales during the seminar wherein they presented their EEPSEA research findings on the cost of illness of exposure to Baguio City's air pollution and the cost of an alternative mode of public transport to reduce it. Les is an Associate Professor at the Department of Economics, University of the Philippines Los Baños.



EEPSEA's knowledge-sharing culture is inclusive, inspiring and infectious. I have always treasured the unique and 'culture'-changing mind-set that I have acquired in all the various opportunities of being trained by EEPSEA.

trainees, and colleagues and even to those outside my environmental and natural resource economics (ENRE) circle. After all, knowledge-sharing should be boundless and if I wanted to make a difference, as Gandhi said, I have to “be the change I want to see in the world”.

EEPSEA's knowledge-sharing culture is ***inspiring***. Convincing students to take *Cost-Benefit Analysis* (CBA) as a specialization course was a hard sell. More challenging was to influence them to major in natural resource economics/environmental economics because ENRE courses were perceived to entail a lot of theoretical and analytical rigor, problem sets, and surveys. Yet, from the experience of a handful of students who made the tough choice and were inspired by the many stories of EEPSEA's knowledge-sharing culture and researches that influenced policy, the enrolment steadily grew to a more or less respectable level.

CBA is now a mandatory course in our BS Economics program, complementing our alumni's assertion that it is one of the top three useful courses in their workplace. Moreover, if in the last 10 years I had only one or two thesis advisees per year who worked on ENRE, now, by some twist of fate, I have five! As Confucius said, “It does not matter how slowly you go as long as you do not stop.”

EEPSEA's knowledge-sharing culture is ***infectious***. A former colleague, Achilles Costales, who is now teaching at the University of the Philippines Baguio, wanted to tackle a serious air pollution issue in Baguio City but his grounding was not on environmental economics. I previously shared some ENRE course materials with him to aid his preparation for a special topics course. Wanting

to help him pursue the air pollution issue he is keen on looking into, I encouraged him to submit a proposal to EEPSEA in 2013, as well as to apply for an EEPSEA training course. He eventually received EEPSEA training and the research grant, which we worked on together. He shared with me after the completion of our research project that the fruit of the endeavor was quite remarkable, in terms of both professional growth and policy influence.

As an added bonus, through the project, we mentored three young researchers. Now, one of them is pursuing graduate studies in ENRE abroad while the other is now a staff of the Environmental Division of the Philippine National Economic and Development Authority.

I can go on and on about how I used my EEPSEA training and research experience to influence and mentor others. So let me just use the words of Hunter S. Thompson to explain in a nutshell why I think EEPSEA's capacity building approach has been effective in influencing me and many others so that they in turn can mentor others, "Anything worth doing is worth doing right". And EEPSEA did it right. This is the perfect tribute to my own EEPSEA mentors and to what EEPSEA stands for.



A 2009 EEPSEA training course in Cambodia wherein Les served as resource person along with another EEPSEA alumni, Asa Sajise. Among the participants are other future EEPSEA research grant alumni, Nyda Chhinh and Spoann Vin.

Sharing what I learned



Dr. Phouphet Kyophilavong is Associate Professor and Vice Dean of the Faculty of Economics and Business Management in the National University of Laos.

EEPSEA has played an important role in my professional development, research and teaching. My EEPSEA participation started in 2005 during its biannual researchers' meeting. Since then, I received and completed two EEPSEA research projects.

I learned a lot about the research process from these two projects. I was also able to present my EEPSEA research papers in various national and international conferences. Now, I am the main lecturer on environmental economics and energy economics at my faculty.

I have used the knowledge and skills that I have gained through EEPSEA in teaching and supervising students. I have been teaching the course on environmental and natural resource economics (ENRE) for undergraduate and graduate students in my university. More than 70 students with thesis focused on ENRE are under my supervision.

I have also used what I have learned from EEPSEA in conducting research and in training my colleagues at the National University of Laos. My EEPSEA research reports have also been used as input for decision making. I have been invited as an advisor by various ministries in Laos.

I have learned a lot from EEPSEA and have shared these with my students and colleagues. I would not have achieved what I have now without EEPSEA's support. Thank you so much EEPSEA!



Part 4.

Some alumni have developed and established courses and degree programs related to environmental economics. These efforts ensure the development of future researchers in the field.

Some of EEPSEA's university-based alumni have used their EEPSEA training to develop and establish environmental economics courses and related degree programs in their respective universities. Those who have been successful in establishing such courses have cited EEPSEA's input as one of the main impetus for them to do so.

These alumni-led efforts are noteworthy as they further amplify EEPSEA's influence in the region by ensuring the development of future researchers in the field.

Academic influence

Improving our curriculum



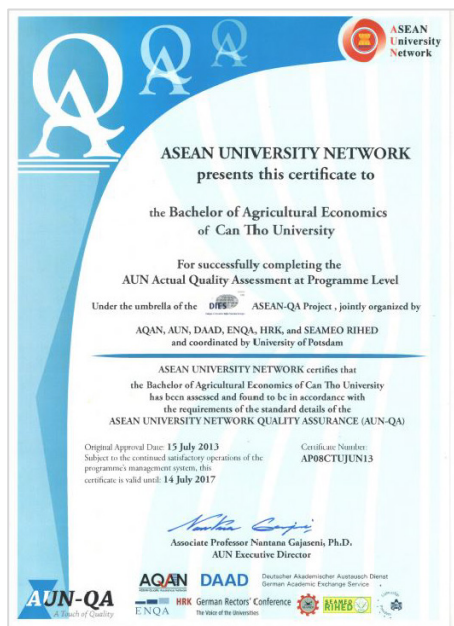
Dr. Ngo Thi Thanh Truc is a lecturer at Cantho University's Department of Environmental and Resource Economics.

The first EEPSEA training I attended was the *Environmental Economics Course for Vietnamese Teachers* in 2005. At the time, Cantho University was about to start offering its undergraduate program in Natural Resource Economics (NRE). Hence, besides improving my teaching materials, the EEPSEA course I attended enabled me to contribute to the NRE program curriculum development.

My first involvement in an EEPSEA-funded research project was in 2006, as one of the co-researchers of the project on the environmental consequences of and pollution control options for pond fish production in Can Tho City's Thotnot District. In 2014, this research was published as a chapter in the Vietnamese book *Economics of Environmental Management in Vietnam* published by the University of Economics in Ho Chi Minh City. It was also included as a chapter in the book *Cost-benefit Studies in Natural Resource Management in Southeast Asia* published by Springer in 2015. These books are important teaching materials in my university.

My next involvement in an EEPSEA research project was in 2015 on the impacts of ecotourism on biodiversity conservation and well-being in Vietnam's Tram Chim National Park. As a young PhD, this research gave me a chance to apply theories as well as to develop my new career in environmental economics and environmental impact assessment.

***In the last ten years,
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Agricultural
Economics.***



Based on what I learned from this research, I was able to help design ecotourism activities for other natural reserves in Vietnam's Mekong Delta such as in Lung Ngoc Hoang Natural Reserve and in Mua Xuan Agricultural Center. It also provided me with experience-based inputs for my teaching.

Also, through EEPSEA's influence, my colleagues and I at Cantho University have been able to improve our university's undergraduate, Masters and PhD programs in Agricultural Economics as well as the undergraduate program in NRE. Our undergraduate program in Agricultural Economics is the first program in Can Tho University to get external Asian University Network (AUN) certification, received in 2013. In 2014, our NRE undergraduate program received its internal AUN certificate.

In 2014, we added two new courses in our curriculum: *Renewable Resource Economics* and *Economics of Climate Change*. The latter course has been included in our Agricultural Economics undergraduate and Masters programs.

To help me become better qualified to teach this course, EEPSEA gave me a training grant to attend its short regional course on the *Economics of Climate Change* taught by Dr. Michael Hanneman in 2015. To further enrich my teaching, EEPSEA is also supporting my participation in two PhD courses on *Environmental Valuation* and *Climate Modelling* at the University of Gothenburg this January to March 2016.

***Me and my colleagues
have all been trained
and mentored through
EEPSEA training
courses and research
projects.***

In the last ten years, EEPSEA has been one of the most important institutions contributing to the development and improvement of my university's academic programs on NRE and Agricultural Economics. Me and my colleagues in the Department of Agricultural Economics and the Department of Environmental and Resource Economics have all been trained and mentored through EEPSEA training courses and research projects. EEPSEA has given us a good start both in terms of our curriculum development and our professional development in the field of environmental economics.



Tram Chim National Park in Vietnam was the site of Truc's EEPSEA research on the impacts of ecotourism on biodiversity conservation. Photo by Le Minh Tan

Introducing students to behavioral economics



Dr. Piyaluk Buddhawongsa is an Assistant Professor and Associate Dean at Chiang Mai University's School of Economics.

I first participated in an EEPSEA course in 2000 during its *4th Regional Training Course on Environmental and Resource Economics* in the University of Philippines Los Baños. Since then, I have conducted three research projects through EEPSEA grants. In the last two grants, both of which were part of cross-country research projects, EEPSEA provided me with additional training on behavioral economics.

Using my experience and training in behavioral economics, I decided to introduce it to my Master level students through their *Special Topic in Microeconomics* course. Behavioral economics was a relatively new field at the time and it had never been taught in my faculty before. The response from the class was excellent. One student even decided to use behavioral economics in his Masters thesis.

Besides enhancing my teaching materials, EEPSEA also provided me with opportunities to serve as a resource person during its various training courses. In 2001, I assisted Dr. Benoit Laplante in an EEPSEA short training course in Lao PDR. Later on, I was repeatedly tapped as a resource person in other EEPSEA short training courses in various countries: Thailand (2007), Cambodia (2008), Lao PDR (2011), Vietnam (2013), Cambodia (2014) and Myanmar (2015). It has been a wonderful experience to meet people all over the region, to share my knowledge with them, and to encourage them to conduct research concerning an environmental problem in their respective countries.

Mainstreaming environmental and resource economics in forestry

The first EEPSEA course I attended was the *4th Regional Training Course in Environmental and Resource Economics* held in April 2000. Since then, I have served as the main proponent in the conduct of two small EEPSEA research projects and have been involved in a number of EEPSEA-funded research projects of other EEPSEA researchers. I was also given the opportunity to work at EEPSEA for 1.5 years when it was based in Singapore. This assignment allowed me to attend several of the Program's capacity building activities and biannual workshops, opportunities in which I learned from high-caliber resource persons and innovative researchers. And now, as one of EEPSEA's Senior Economists, I have been involved in mentoring activities and have also been able to attend more specialized training courses designed to support active researchers.

The knowledge and experience I gained from EEPSEA have allowed me to help develop and strengthen the resource and environmental economics program of Visayas State University during my stint there. And this passion to share my knowledge and mentor students on environmental and resource economics has continued when I joined the College of Forestry and Natural Resources (CFNR) of the University of the Philippines Los Baños (UPLB) in 2009. Here, I was able to mainstream environmental and resource economics in the Forestry curriculum both at the undergraduate and graduate levels.



All of the courses I have helped develop have been influenced by the way EEPSEA delivers its capacity building programs—by keeping a balance of theory, practice and policy relevance.

For the undergraduate curriculum, I internally revised an existing specialized course on *Forest Finance* by incorporating cost-benefit analysis, including economic valuation of forest ecosystem goods and services and the theory and practice of payment for ecosystem services. This specialized course is now included as a core course in CFNR's BS Forestry degree program in line with the academic program improvement of the university and the K-12 program implementation in the country.

I also proposed two special topics in CFNR's graduate program: (1) *Economics and Financing of Ecosystems Services and Biodiversity*; and (2) *Economic Valuation of Forests for Climate Change Adaptation and Mitigation*.

Both incorporate environmental and resource economics theory and application and are now taken by MS and PhD students of CFNR and the UPLB School of Environmental Science and Management. They have become popular among graduate students, especially those planning to incorporate environmental economics methodologies in their academic research projects; I have been requested to offer the said courses every semester.

As part of CFNR's continuing curriculum improvement, the first special topic is currently proposed as a regular course in the PhD Forestry degree program. These two special topics are also included as core courses in the proposed *International Collaborative Program on MSc in Biodiversity and Conservation*, a joint offering among three universities in Southeast Asia (i.e., UPLB, Universiti Putra Malaysia, and Bogor Agricultural University). In the proposal, they were renamed as: (1) *Payments and Financing for Forest Ecosystem Services and Biodiversity*; and (2) *Valuation of Biodiversity and Ecosystem Services*.

All of the above courses that I have helped develop are influenced by the way EEPSEA delivers its capacity building program—by keeping the balance of theory, practice and policy relevance. I hope to continue this tradition of sharing knowledge and expertise and providing students with mentoring support as my way of thanking EEPSEA and its mentors.

Teaching environmental economics using experiments



Dr. Pham Khanh Nam is Deputy Dean of the University of Economics Ho Chi Minh City's Faculty of Development Economics, EEPSEA's Deputy Director for Research, and Director of the Economy and Environment Partnership for Southeast Asia (EEPSEA Partnership).

"Tell me, I'll forget. Show me, I'll remember. Involve me, I'll understand". This Chinese proverb has never been more correct in teaching environmental economics.

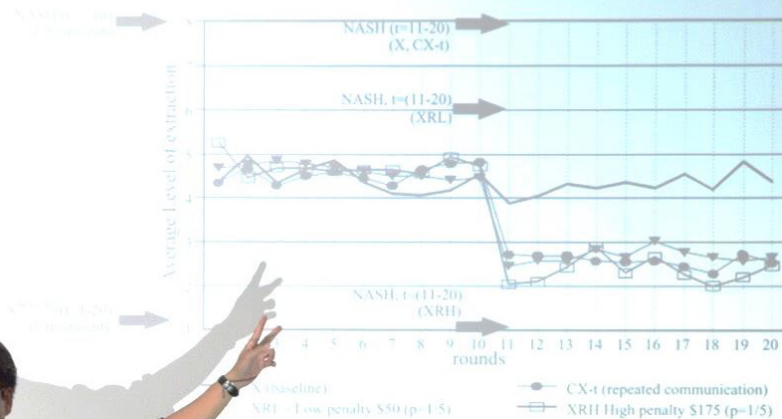
I started using experiments in teaching various environmental economics concepts and theories in my university in 2004. My very first try was in explaining the tradable discharge permit market. I was inspired by the game conducted by Prof. Nancy Olewiler in the *EEPSEA Biannual Conference* in Manila in 2001 and I have adopted it for every environmental economics class that I have taught since. Students are always fully involved in the game and are quick to understand what tradable discharge permits are about.

Seeing how experiments can enhance teaching and becoming involved myself in the conduct of experiments during my EEPSEA dissertation grant in 2009, I felt the importance of introducing and demonstrating the use of classroom experiments to my colleagues in the university. I have started to compile various types of classroom experiments into a teaching material portfolio and have held seminars to introduce it to my university colleagues. Concepts such as common pool resources, public good, demand and supply, tradable permits, Hotelling model, and the international negotiation on global warming are now being taught using experiments in our university's classrooms.

I have held seminars on the use of classroom experiments to introduce it to my university colleagues.

Many EEPSEA researchers are experimental economists or took part in the Program's training courses on experiments for environmental management. I believe experiments will be a powerful teaching tool in environmental economics classes in Southeast Asian countries.

Common Pool Resource Experiment (Cardenas 2004)



Nam serving as a resource person during the EEPSEA course on the *Experimental Method for Environmental and Resource Economists* held in Penang, Malaysia in August 2014.

Developing environmental economics courses



Dr. Zenaida M. Sumalde is a Professor at the University of the Philippines Los Baños' Department of Economics.

My participation in EEPSEA started way back in 1997 when I was awarded a post-doctoral fellowship to take advanced courses on environmental and natural resource economics at the University of British Columbia. Since then, I have conducted environmental economics research studies that focus on coastal resource management, solid waste management, and aquaculture pollution as well as on mainstreaming gender into environment and natural resource economics studies.

EEPSEA had also supported my attendance to conferences and short-term trainings. Results of my research studies have been presented in international conferences and are published in international journals and as a chapter in locally and internationally published books.

I also believe that my experiences from these EEPSEA trainings and research projects provided me with the opportunity to be appointed as a member of the Technical Working Group in two of my university's Interdisciplinary Centers: the Integrated Natural Resource and Environment Management Center, and the Climate Risks Studies Center. These two Centers, which are composed of faculty members from various disciplines, are the ones in charge of crafting and coordinating UPLB's programs on natural resource management and climate risks.

With the knowledge and experiences I gained from EEPSEA trainings and research activities, I was able to develop the undergraduate course *ECON 172: Economics*

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of Pollution Control and Regulations. ECON 172 started as a special topics course in 2000; it became a regular course offering in 2002. The course is now part of the major subjects of BS Economics students majoring in natural resource economics. It is also taken as an elective course of agricultural economics students and MS Environmental Science students. Results from my EEPSEA research activities were instrumental in improving my teaching materials for ECON 172.

I also served as part of the team who instituted the graduate course *ECON 271: Advanced Environmental Economics*, which was only recently approved by the faculty of the College of Economics and Management. It will be one of the required courses in the newly revised MS Economics program under the Environmental Economics field of specialization that is offered by the Department of Economics.

I believe that without my EEPSEA involvement, it would be difficult for me to institute these courses, a legacy that I will leave after my retirement from service to the Department and to the University in general.



The May 1998 EEPSEA Biannual Researchers' Workshop, which was the first attended by Zeny (fourth from the left, second row) and wherein she presented the proposal for her first EEPSEA research project.



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