



INTERNATIONAL AGROFORESTRY EDUCATION CONFERENCE
**INTEGRATING CONSERVATION IN THE
UPLAND AGRICULTURE IN SOUTHEAST ASIA**

24-26 October 2007
The Imperial Mae Ping Hotel Chiang Mai
Chiang Mai, Thailand

Edited by Jesus C. Fernandez



WORLD AGROFORESTRY CENTRE

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SEANAFA

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Foreword

About three decades ago, agroforestry was still being regarded as a practice in search of a science. Things have changed very rapidly since then. Today, the practice and science of agroforestry have come of age already. Vigorous agroforestry research and development in the past have built up scientific foundations and knowledge bases on the nature and processes of tree-crop-livestock interactions and their effects on system productivity and environment. Agroforestry has advanced over the years in terms of the rigorous methods developed for doing research and transferring technological innovations, all in the quest to eradicate poverty, ensure food security, and assure environmental integrity, particularly among the developing countries of the world.

But the quest does not end with these significant achievements. In Southeast Asia, the compelling call is for these gains to be applied to further foster a tree revolution on smallholder farms, increase on-farm food production and income, and help the rural poor achieve better food security and nutrition. More researches are needed in expanding tree cropping in the farms, improving tree product processing and marketing, and addressing the lack of enterprise opportunities for the small scale upland farms. The domestication of indigenous trees and the commercialization of their products are major frontiers that are yet to be explored. The rural poor still needs help in managing better the natural resources around them, and rewarding them for the environmental services they are able to provide through agroforestry. With the expanding body of knowledge in scientific agroforestry, it is inevitable that agroforestry acquires an increasing share in the tertiary educational programs in the region. There has to be more substantial inputs to provide more trainings and other non-formal education on the various phases of agroforestry production, utilization, and marketing, particularly among the resource-poor farmers in the uplands.

The Southeast Asian Network for Agroforestry Education (SEANAFE) is well aware of the aforementioned challenges. Since its establishment in 1999, the network is guided by its mission to

develop human resources for agroforestry and integrated natural resource management through collaboration among educational institutions in the region. Through its network members, SEANAFE seeks to: (1) provide regional and national mechanisms for interdisciplinary collaboration among agroforestry institutions and programmes; (2) build individual and institutional capacity for agroforestry education, research and development; (3) strengthen the quality, availability and accessibility of agroforestry education; (4) facilitate research connectivity and collaboration; (5) link agroforestry education to the extension system and practice in the field; (6) promote and develop skills in communication and information dissemination, and; (7) assist in mobilizing resources for national and regional collaboration on agroforestry capacity building. Today, the network has 93 members, all educational and research institutions, in Indonesia, Lao PDR, Malaysia, the Philippines, Thailand, and Vietnam. SEANAFE's activities have largely been supported by funds from the Swedish International Cooperation Agency (SIDA) and with the World Centre for Agroforestry (ICRAF) - Southeast Asia Regional Office providing technical and administrative support.

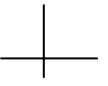
Cognizant of its role to promote agroforestry development through education, SEANAFE organized an International Conference on Agroforestry Education, with the theme "Integrating Conservation in the Upland Agriculture in Southeast Asia" in Chaingmai, Thailand on 24-26 October 2007. The conference provided the venue to examine how landscapes in Southeast Asia's uplands are changing and how higher education institutions are responding to that change. For SEANAFE, the conference was a significant milestone as it brought together 130 agroforestry educators, scientists and practitioners whose presentations and exchanges of ideas brought to the fore the multifarious issues that confront agroforestry and natural resources management, and agroforestry education in Southeast Asia. This report encapsulates the highlights of papers presented during the conference and the outcomes of the small group workshops, including some themes and suggested actions emerging from the Conference discussions.

SEANAFE is very grateful to the organizations and individuals who have made the conference a success – the organizers, the sponsors,

the speakers and session facilitators, and all participants. The wealth of ideas generated during the discussions certainly enriched the existing body of knowledge on agroforestry and natural resources management. These insights will certainly be useful in further promoting agroforestry as a sustainable land use option in the uplands of Southeast Asia.



Dr. Wilfredo Carandang



Acknowledgements

The conference was a product of a fruitful collaboration between and among organizations and individuals.

The Southeast Asian Network for Agroforestry Education (SEANAPE) is grateful to the Faculty of Agriculture of Chiang Mai University (FoA-CMU), World Agroforestry Centre (ICRAF) Thailand Office, the University of Hohenheim-Uplands Program (UoH-UP), and the United Nations Food and Agriculture Organization Regional Office for Asia and the Pacific (FAO-RAP) for their valuable inputs in co-organizing the conference.

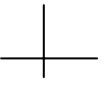
We would also wish to acknowledge the financial support from SEANAPE's core donor, the Swedish International Development Cooperation Agency (Sida), and its partner agencies, namely: FAO-RAP, the German Research Foundation (DFG), and ICRAF.

Our sincere appreciation also goes to the members of the abstract screening and technical advisory committees (Patrick Durst, Ken Shono, Andreas Neef, David Thomas, August Temu, Meine van Noordwijk, and Jess Fernandez), our session moderators (Patrick Durst, David Thomas, and August Temu), and session keynote speakers (Gil Villancio, Andreas Neef, Somchai Tasinga, and Per Rudebjer).

For the exceptional administrative services provided during the conference, we would like to recognize the coordinators and members of the various committees from FoA-CMU led by Boonsern Cheva-Isarakul, UoH-UP and ICRAF Thailand.

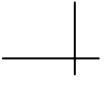
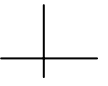
Special acknowledgement goes to Meine van Noordwijk for drafting the Proceeding's Executive Summary and Andreas Neef for reviewing and suggesting improvements on this document.

Lastly, we thank all the 130 participants who attended the conference, particularly those who gave oral and poster presentations, on which this report is based.



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Executive Summary

Lives and landscapes in the uplands of Southeast Asia are rapidly being transformed by rapid societal changes and emerging global environmental issues, evolving perspectives and demands of society on forestry and agroforestry, and new actors and institutional arrangements in governance and policy making process. Thus, 130 scientists, educators and practitioners gathered during a 3-day International Agroforestry Education Conference on 24-26 October 2007 in Chiang Mai, Thailand to examine these transformations and identify ways to better develop the uplands through agroforestry.

With the theme “Integrating Conservation in the Upland Agriculture in Southeast Asia,” the conference covered three main sessions, namely: 1) Striking a balance between food security and environmental conservation in the uplands; 2) Making more sense of past and present upland development programs and policies; and 3) Redefining the niche of learning institutions in agroforestry education for upland development. Invited keynote speakers expounded on each of the sessions while 37 participants shared project experiences through oral (16) and poster (21) presentations.

The Conference revealed that upland stakeholders in the region have different perspectives on balancing food security and environmental conservation. For some, the route of market-based intensification of vegetables and flowers for export had worked and provided an alternative to unsustainable shifting cultivation. In other contexts, intensified rice production can still play this role. For others, the complex agroforests have provided a long-term approach that still allows response to changing market environment. Ecotourism, empowerment of minority groups and re-appraisal of indigenous knowledge in conservation are a major influence in the more accessible parts of montane mainland Southeast Asia. Market oriented livelihoods change leads to social stratification depending on comfort level with risk, access to suitable land and transportation. The ‘rights and resources’ issue provides an underpinning for effective lowland – upland linkage, benefit sharing, co-investment and reward mechanisms.

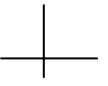
The Conference also noted that development and policy problems in the uplands reflect the needs to (a) challenge knowledge uncertainties, myths, & overly simplistic perceptions; (b) expand sustainability focus from ecological to social & economic dimensions; (c) understand households & communities as managers of asset portfolios; (d) accept & understand diverse interests & needs of local stakeholder groups; (e) address institutional challenges for co-management & stakeholder alliances; and (f) understand processes at different levels/scales & interactions among them. It also highlighted the importance of using scientific tools and approaches beyond agriculture and forestry (e.g., psychology, economics, geography, anthropology, landscape ecology, political science, regional planning, etc.) to investigate local perceptions and decision-making in policy development, and building strategic alliances among stakeholders.

As regards the niche for agroforestry education, the Conference surfaced several basic questions. Why are there few learning institutions in the SEA region that offer curricular programs in agroforestry? Why do agroforestry education generally assumed to fall within the forestry discipline? Is there really a demand for agroforesters? If so, who needs them? With the scope of agroforestry expanding due to the emerging social, economic, and environmental concerns, what are its boundaries? What should really constitute agroforestry as a science? In the absence of a globally accepted typology of agroforestry land uses, spatial data on AF is still weak and more empirical data are needed to critically assess the general romanticizing about the potential benefits of AF and trees.

In four working group sessions, participants considered the relations between agroforestry and four large policy concerns: market-based economic development, poverty, climate change and environmental services, and decentralization/ governance. In all four areas, agroforestry was considered as being potentially relevant, at tree, farm, landscape and governance scale, respectively. Knowledge gaps, uncertainties and controversies in each of these four relations should stimulate relevant research – which will require disciplinary strengths and tools that go much beyond what has been so far the focus of agroforestry education. A substantial broadening of the approach is thus called for. SEANAFE and other educational networks are critical

to create the needed synergy among the academe, government and private sectors towards promoting agroforestry in the uplands.

The conference was sponsored by the Swedish International Development Cooperation Agency (Sida), the German Research Foundation (DFG) and the United Nations Food and Agriculture Organization (FAO). It was jointly organized by the World Agroforestry Centre- SEA, the Southeast Asian Network for Agroforestry Education (SEANAFE), Chiang Mai University (CMU), the University of Hohenheim-Uplands Program and UN-FAO Regional Office for Asia and the Pacific.



Introduction

The International Conference on Integrating Conservation in the Upland Agriculture in Southeast Asia resulted from the recognition that lives and landscapes in the uplands of Southeast Asia are undergoing rapid transformation. This transformation is brought about by rapid societal changes and emerging global environmental issues, evolving perspectives and demands of society on forest, and new actors and institutional arrangements in governance and policy making process. There was also a notion that this scenario may continue to be the case in the region unless stakeholders acquire full knowledge and appreciation of the issues and concerns causing the transformation of the uplands.

The conference, therefore, was organized to examine how landscapes in Southeast Asia's uplands are changing and how higher education institutions are responding to that change. Specifically, the Conference had the following objectives:

- Share evidences and experiences that strengthen the convergence of food security and environmental conservation goals for the uplands of Southeast Asia
- Examine and extract lessons from policies and programs related to agroforestry and natural resources management in Southeast Asia uplands
- Capture and develop shared understanding of the challenges, trends and best practices in agroforestry and natural resources education toward sustainable agriculture in Southeast Asian uplands

This report contains a synthesis of the papers presented and the outcomes of the small group workshops, and some themes and suggested actions emerging from the Conference discussions.

Participants and Organizers

The Conference was attended by 130 scientists, educators and practitioners in upland development representing 12 countries mostly from Southeast Asia. From the 55 individuals who submitted abstracts, 16 of them were selected for oral presentations while 21 of them participated in the poster presentations.

The Conference was jointly organized by the following:

Southeast Asian Network for Agroforestry Education (SEANAFE)
Faculty of Agriculture of Chiang Mai University (FoA-CMU)
World Agroforestry Centre (ICRAF)-Thailand Office
Food and Agriculture Organization-Regional Office for Asia and the Pacific (FAO-RAP)
University of Hohenheim-Uplands Program (UoH-UP)

With funding support from:

Swedish International Development Cooperation Agency (Sida)
Food and Agriculture Organization-Regional Office for Asia and the Pacific (FAO-RAP)
German Research Foundation (DFG)

Program

The 3-day conference consisted of the following activities: an opening session, three thematic sessions, information market, small group workshops, and a wrap up session.

A welcoming panel, composed of representatives from collaborating organizations, gave speeches to formally open the conference and set the ensuing discussions. They included Captain Dr. Duentemduang Na Chiang Mai (Chiang Mai City Mayor), Dr. Meine van Noordwijk (ICRAF-SEA Regional Coordinator), Dr. Andreas Neef (Coordinator of the UoH-UP), Mr. Patrick Durst (Senior Forestry Officer of FAO-RAP), Associate Professor Theera Visitpanich (Vice President of CMU), and Dr. Monton Jamroenprucksa (former SEANAFE Board Chair and Head of the Department of Forest Management of Kasetsart University).

The three thematic sessions of the Conference focused on the following:

1. Striking a balance between food security and environmental conservation in the Southeast Asian agricultural uplands
2. Making more sense of past and present agroforestry and natural resources management policies and programs
3. Redefining the niche of tertiary learning institutions in agroforestry and natural resources education

These sessions consisted of a keynote paper each and a total of 16 oral presentations. Annex A contains the names of session keynote and paper presenters.

Coffee breaks served as information market sessions for poster presentations and displays of publications and other relevant documents of participating organizations.

In four working group sessions, the Conference participants considered the relations between agroforestry and four large global policy concerns: market-based economic development, poverty, climate change and environmental services, and decentralization/governance.

A synthesis of Conference discussions and workshop outputs wrapped up the Conference.

The Conference Opening Program

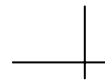
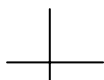
A welcoming panel, composed of representatives from collaborating organizations and the mayor of Chiangmai City, gave speeches to formally open the conference.

Captain Dr. Duentemduang Na Chiang Mai, Chiang Mai City Mayor, welcomed all the participants and members of the organizing committee. She recognized the importance of the conference considering the rapid and intensive commercial productions of agricultural crops that are taking place in the uplands of Northern Thailand and elsewhere in Southeast Asia. She observed that this production trends are linked to further destruction of natural forests, biodiversity loss, land and forest degradation associated with soil erosion, soil fertility depletion, water scarcity and pollution, and land disputes among communities. She highlighted the role of the academic and research communities to help address the concerns.

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Meine van Noordwijk, ICRAF-SEA Regional Coordinator, called for the participants to “think outside the box” as regards the science and practice of agroforestry in terms of its potential to help solve global socio-economic and environmental problems such as food scarcity and climate change. He emphasized the need for learning institutions to be innovative in equipping the next generation of foresters and agriculturists with the ability to link knowledge to action and enable them to be active participants in national policy decision-making.

Andreas Neef, Coordinator of the Upland Program of the University of Hohenheim, emphasized his program’s desire to share knowledge and experiences on sustainable land use and rural development in mountainous areas of Southeast Asia particularly in Thailand and Vietnam. He considered the conference as another timely venue to update and validate upland development experiences in the region. He encouraged the participants to be critical in examining upland development issues and put forward ideas to help address them.



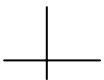
Patrick Durst, Senior Forestry Officer of FAO, expressed his organization's delight to co-organize and sponsor the conference. He regarded the event as a great opportunity for participants to share experiences in balancing food security and environmental conservation in the uplands of SEA. He emphasized that agroforestry has long been the key component of food security and natural resource management strategy throughout the region. But he also observed that the rapid economic development, very quick demographic changes coupled with the renewed interest in conservation and environment, agroforestry seems to be taking new roles and renewed importance throughout the world and the implication for AF Education to meet these emerging challenges is obvious. He also said that these new developments have been recognized in the International Conference on the "Future of Forest" by the Asia Pacific Forestry Commission and FAO held in October 2007 in Thailand.

Associate Professor Theera Visitpanich, Vice President of Chiangmai University, spoke in behalf of his president. Before officially declaring the conference open, he related his president's hopes that the conference participants would be able to examine and synthesize the past lessons into a new direction and policies of current management of land and natural resources from the local to global levels, and that the conference would provide the best strategies and practices in agroforestry and natural resource conservation towards sustainable agriculture.

Monton Jamroenprucksa, former Chair of SEANAFE Board and Head of the Department of Forest Management of Kasetsart University, gave the keynote address of the conference. He particularly shared his thoughts on the role of agroforestry in helping solve socioeconomic and environmental problems in the uplands and how educational institutions should respond to develop qualified graduates who understand trees and farmers, and be able to integrate them with all agricultural land use to provide economic productivity and environmental services. He observed that the rapid land use changes in SEA uplands are due to increasing population, commercialization of agricultural production, deforestation, establishment and extension of national parks, changes in land allocation policies, etc. He considered this scenario as an opportunity

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for learning institutions to be involved in providing solutions through agroforestry education. He emphasized the need to keep working to (1) strengthen the quality, availability and accessibility of agroforestry education, (2) develop and produce appropriate and effective agroforestry teaching materials and methodologies, (3) provide national and regional mechanisms for interdisciplinary collaborations among agroforestry institutions and programs, (4) build individual and institutional capacity to facilitate agroforestry education and research connectivity, (5) link agroforestry education to extension systems and practice in the field, and (6) promote and develop skills in communication and information dissemination. In this context, he highlighted the importance of sustaining an effective regional and national networking infrastructure for agroforestry education such as SEANAFFE.



Synthesis of Conference Session Presentations and Small Group Workshops

With the theme “Integrating Conservation in the Upland Agriculture in Southeast Asia,” the conference covered three main sessions, namely: 1) Striking a balance between food security and environmental conservation in the uplands; 2) Making more sense of past and present upland development programs and policies; and 3) Redefining the niche of learning institutions in agroforestry education for upland development.

Session 1: Striking a balance between food security and environmental conservation

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This session aimed to share evidences and experiences that strengthen convergence and complementation of food security and environmental conservation goals for the uplands of SEA.

Session 1 of the Conference revealed that upland stakeholders in the region have different perspectives on balancing food security and environmental conservation. For some, the route of market-based intensification of vegetables and flowers for export had worked and provided an alternative to unsustainable shifting cultivation. In other contexts, intensified paddy rice production can still play this role. For others, the complex agroforests have provided a long-term approach that still allows response to changing market environment. Ecotourism, empowerment of minority groups and re-appraisal of indigenous knowledge in conservation are a major influence in the more accessible parts of montane mainland Southeast Asia. Market oriented livelihoods change leads to social stratification depending on comfort level with risk, access to suitable land and transportation. The ‘rights and resources’ issue provides an underpinning for effective lowland – upland linkage, benefit sharing, co-investment and reward mechanisms.

Keynote Session Paper:

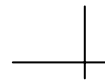
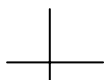
Virgilio T. Villancio (UP Los Banos, Philippines): In developing countries of Southeast Asia, the rate of land conversion from its natural state to domesticated landscape has rapidly increased in recent years brought about by the growing population and the increasing needs for food, feeds, fiber, fuel and other human necessities. This phenomenon has also resulted to frequent occurrence of natural disasters such as floods, drought, and landslides as well as pollution, loss of biodiversity, and other associated problems. The current biofuel initiatives to produce biodiesel, ethanol and other non-food but essential products have received criticisms in several fronts of society due to the negative impacts they bring to ensuring food security and environmental conservation. This heightens the role of agroforestry to go beyond farm level approaches to landscape level and from production to enterprise and market development toward sustainable livelihood.

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Case Presentations

Le Quoc Doanh and Ha Dinh Tuan (NOMAFSI, Vietnam): NOMAFSI's project on Mountainous Agricultural Systems in the Mountainous Regions of North Vietnam has proven that developing and transferring comprehensive, intensive and sustainable farming systems to upland communities could help achieve both economic efficiency and environmental sustainability. The project has helped increase Vietnam's annual rice production by 7.0% in the last decades and also the forest cover from 27.8% in 1990 to 37.5% in 2005.

Aer Sirijinda, et al. (Kasetsart University, Thailand): Adoption of greenhouse agriculture by Hmong ethnic minority farmers could enhance forest conservation in Northern Thailand. Growing sweet pepper in a greenhouse provided an average profit of 350,000 Thai Baht per hectare compared to 200,000 Thai Baht per hectare of growing roses which the Hmong farmers consider as their most profitable crop. However, there are several constraints identified for Hmong farmers to fully exploit this opportunity. These include insecure land rights, limited credit, lack of skill in greenhouse agriculture production, and poor access to contract market channels.



Pamela Crosby (UP Diliman, Philippines): In 2001, six years later after its inscription as a cultural site, the “Rice Terraces of the Philippines Cordilleras” was declared a World Heritage in Danger due to the gradual deterioration and diminishing number of the rice terraces. Rapid urbanization due to a growing tourism industry in the area has significantly contributed to the rate of conversion of rice terraces into built areas. This is now exerting pressure on the food supply of this once subsistence community. With crop production areas also expanding, the terraces are now experiencing mass wasting while new crop patches are prone to erosion and landslide. Community-based initiatives and interdisciplinary approaches are proving to be promising trajectories to resolve resource management and development issues in the area.

Nguyen Dinh Tien, et al. (CARES-HAU, Vietnam): Composite swiddening still proves to be an indispensable farming system in Tat hamlet in Northern Vietnam due to limited paddy lands in the area. Swidden rice achieved a gross margin of 1,224 million VND/ha (one-fifth of the gross margin of paddy) and its gross value to labor was at 12,500 VND/day (less than two-thirds that of paddy). In this system, however, the forest plays an essential role as a water regulator for irrigation and its management should, therefore, be carefully planned.

Carlito R. Solera (DMMMSU, Philippines): Avenue Cropping System (ACS) presents a promising option as a soil-conserving and poverty-alleviating agroforestry technology in the uplands of the Philippines. An offshoot of the Rubber-based Cropping System (RbCS), ACS utilizes farmland to its maximum through carefully planned and designed cropping system with rubber as the dominant tree crop. Under this system, rubber trees are planted much farther apart than in the RbCS, thus, leaves permanent space for raising intercrops and livestock promoting more sustainable income to farmers. In addition to earning PhP120,000.00/ha/year from rubber, farmers earn income from livestock and intercrops as early as one year after the plantation has been established.

Robin Roth (York University, USA): The uplands of Southeast Asia are experiencing a dual-turn towards markets as a strategy for meeting both conservation and development goals. The result of this convergence is increasing market-oriented governance in landscapes,

where people's livelihoods and biodiversity are both at risk. Paying attention to the role of community institutions and household decision-making in the process of market integration could provide a window into the social outcomes associated with increased market activity in buffer and enclave communities. It can also help generate more effective strategies for meeting conservation and livelihood goals.

Session 2: Making More Sense of Past and Present Agroforestry and Natural Resource Management Policies and Programs in Southeast Asia

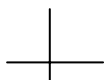
In Session 2, the Conference noted that there seemed to be a deadlock between upland development and conservation policies, particularly in watershed areas, in most countries in Southeast Asia. Various approaches to address this deadlock have provided both positive and negative consequences depending on the kind of tenure security, resources available, political context, and the level of commitment and participation of people working for and living in the uplands.

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Keynote Session Papers:

Andreas Neef (University of Hohenheim Uplands Program): Many policy measures have been misguided by (1) failing to acknowledge the multi-functional character of mountain watersheds, (2) putting too much emphasis on one-size-fits-all conservation models, technology-driven solutions and command-and-control approaches, and (3) neglecting the various institutional dimensions of resource conservation and integrated watershed management. The latter is particularly evident in the failure of most Southeast Asian governments to legally recognize communal forms of resource tenure and to monitor more closely the differential impacts of private and state property regimes and of enhanced market integration on resource conservation and adoption of sustainable and less sustainable agricultural practices in the uplands.

Co-management approaches to natural resource conservation or multi-stakeholder platforms in combination with Payment for Environmental Services (PES) schemes have been widely proposed to



break the deadlock in upland conservation policies and pilot projects in Indonesia and the Philippines which have shown encouraging results in some locations. Yet, they still have to prove their viability on a broader scale and their swift implementation seems to be unrealistic in countries such as Thailand and Lao PDR where both tenure security and political participation of upland people are weak and the skepticism of lowland dwellers and policy-makers towards ethnic minorities' capacities to manage upland resources in a sustainable way remains strong.

International highland projects – while using the common development rhetoric of participation and sustainability – have mostly failed to induce meaningful social empowerment of marginalized highlanders and to foster multi-stakeholder partnerships and more sustainable resource management practices beyond projects' borders and duration. Success was possible where project staff and government officials showed long-term commitment to social and institutional change and where the focus was primarily on people's livelihoods and adaptive capacities rather than on commodities and fixed technological packages.

Future policies and approaches towards integrated watershed management need to overcome the perceived antagonism between conservation and development in upland areas of Southeast Asia. They should also be able to determine the socially, institutionally, and ecologically optimal mix of agricultural production, ecological services and rural livelihood opportunities.

Somchai Tasinga (Office of Natural Resources and Environmental Policy and Planning, Ministry of Natural Resources and Environment, Thailand): Thailand has been familiar with various types of agroforestry practices for a long time. The more recent landscape-level agroforestry concepts, which help improve understanding of interactions among agriculture, forests, and environmental services such as water, biodiversity, carbon stocks, etc., found initial application in the mountainous Northern region of Thailand. Agroforestry practices and landscape management have become vital components of the Royal Project Foundation of Their Majesties the King and Queen to bring improved economically viable livelihoods to remote highland areas and assuring sustainability and protection of important environmental services. The ONREPP-MNRE

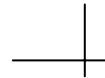
reinforces these efforts specifically relating to integrated watershed management in the Ping River Basin. Efforts have focused on several key levels of organizational mechanisms that can improve participatory management of natural resources and environmental services. This includes negotiations and collaborations among a range of important stakeholders from upstream to downstream areas, in accordance with principles of equity and covering many aspects related to quality of human life. If multi-level participatory river basin management organizations become operational, they may be able to provide a forum for negotiation among major stakeholders that may include some form of compensation for those being asked to bear costs of activities that primarily benefit downstream or other elements of society. The ONREPP-MNRE believes that this approach could be one of the most important mechanisms in Thailand for rewarding the provision of environmental services in a sustainable manner.

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Case Presentations:

Tran Duc Vien and Nguyen Vinh Quang (CARES-HAU, Vietnam): The promulgation of the Law on Forest Protection and Development in 1991 and the Land Law in 1993 during the 'Doi Moi' period from late 1980s up to present signaled the initial step of Vietnamese government to decentralize natural resource management in the country. Though some degree of success was achieved, the results of these policy changes, however, were not too promising in some areas.

Prasnee Tirpaqsa and Pepijn Schreinemachers (University of Hohenheim, Germany): Thai policy makers have recently put increasing emphasis on the concept of 'sufficiency economy' to promote well being of Thai people. However, such emphasis must look into how to balance the benefits of the integration of ethnic minority households, like the Karen farmers in Northern Thailand, into the market economy and, at the same time, its impact on the production resources. Karen households were found to be well integrated into markets. Although they still predominantly rely on their rice production and other minor field crops for home consumption, a large number of Karen households have diversified into market-oriented crops. Shifting towards market oriented agriculture increases the demand for production resources, some of



which are becoming scarce in the area such as water. The long-term economic prospects of agricultural commercialization and possible adverse ecological impacts associated with increased use of agro-chemicals are also major concerns.

Katherine R. Emans Sims (Harvard University, USA): In Northern Thailand, sub-districts with higher proportions of land in national parks and wildlife sanctuaries are associated with significantly higher forest cover than other similar sub-districts, suggesting meaningful enforcement of land use restrictions. Despite the increase in forest cover, sub-districts with high proportions of land in national parks actually have higher estimated incomes and lower estimated poverty headcounts than comparative sub-districts. National parks also appear to have generated positive spillovers to neighboring sub-districts in terms of forest cover and economic outcomes. Wildlife sanctuaries, however, are not associated with significant effects on incomes or poverty, and may have had negative spillover effects with regards to forest protection. The difference in outcomes between protected area types is likely explained by the government's promotion of recreational tourism and associated amenities in the national parks. While national parks and wildlife sanctuaries in Thailand do not seem to have impoverished local sub-districts compared to similarly remote sub-districts, it is important to note that when compared to urban sub-districts, communities with protected areas are clearly poorer in material wealth.

Romulo T. Aggangan, et al (PCARRD, Philippines): The Sustainable Agriculture and Natural Resources Management Collaborative Research Support Program-Southeast Asia (SANREM CRSP-SEA) had significant progress in ensuring research results are packaged and disseminated to appropriate audiences. Some of the strategies include School-on-Air programs, Farmers' Technology Forum, training, and use of 'warik warik (a four-wheel vehicle that travels around remote areas to sell basic goods). As more research outputs are produced, the challenge is to develop more innovative strategies to reach a wider and more diverse set of information users. Such should be looked at as an integral component in development policy formulation.

Wimolpat Bumbudsanpharoke (University of Edinburgh, UK) and D. Moran (Scottish Agricultural College, UK): Theory of Planned Behavior (TPB) has been used in agricultural research to examine farmers' behavioral responses to technological innovations, management techniques and changing support mechanisms. It states that behavioral intention is determined by a combination of attitudes towards the behavior outcomes, perception of others' views towards the behavior, and the degree of control one thinks one has over a decision to carry out the behavior. The theory is being regarded as a possible framework to investigate the intention of farmers to adopt agri-environmental policy in Thailand. It could also be used to overcome the relative lack of concern among policy makers over willingness to advocate such kind of policy.

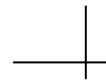
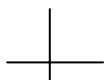
Session 3: Redefining the Niche of Tertiary Learning Institutions in Agroforestry and Natural Resource Education for Upland Development

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Session 3 confirmed that agroforestry education in universities and colleges in Southeast Asia is offered in different modes depending on the existing educational policies and job markets. The session also noted a growing interest among learning institutions in the region to strengthen research-instruction-extension integration through partnerships with farming communities and other relevant stakeholders. These partnerships are usually geared to formulate effective learning materials in agroforestry and natural resource education that could better build the competence of students after graduation.

Keynote Session Paper:

Per Rudebjer (Bioversity International): Agroforestry has been taught in tertiary education for three decades already but countries in Southeast Asia have taken strikingly different routes. For instance, universities in Thailand offer agroforestry as optional courses of few credit hours in BSc and MSc programs. In the Philippines, more than 30 universities teach full BSc programs or majors in agroforestry. But regular agriculture and forestry programs in the Philippines may still have little agroforestry content. These different views of agroforestry education reflect each country's agriculture,



environmental and educational policies and job markets. Today, agroforestry science covers a wide range of drivers and processes that influence landscapes and livelihoods: inter alia, environmental service payments, market chain analysis, participatory landscape analysis, multi-stakeholder negotiation, policy analysis, biodiversity assessment in agroecosystems, etc. The items on this list cannot be isolated from other natural resources disciplines, such as agriculture and forestry.

Case Presentations:

Orlando P. Almoite (DMMMSU, Philippines): DMMMSU is considered the first learning institution in the Philippines and in the world to offer BS Agroforestry course as a formal degree program in 1976. In a country where curriculum development in higher education has been traditionally top-down, DMMMSU has managed to be participatory in its approach in coming up with its BS Agroforestry program and in ensuring the quality and sustainability of the same up to present.

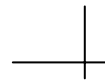
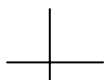
Budsara Limnirankul, et al (Chiang Mai University, Thailand): Chiangmai University in Thailand is exploring a new research-education integration which focuses on partnerships between farming communities and universities to develop dynamic learning modules that will better build the competence of undergraduates. This is based on a context-mechanism-outcome relationship where (1) contextualization provides a basic understanding of the interrelation of various elements such as agriculture, livelihoods, resources conservation and utilization, economic incentives, social relations, and institutional intervention; (2) social mechanisms are introduced to promote interactive learning by both facilitators and farmer leaders, supported by analysis of various case studies, and (3) outcomes include competence in community action research in agroforestry studies. The learning module is a four-week training workshop for senior undergraduate students with a natural science and/or social science background. It aims to build the research capability of undergraduates in using a community action research approach to biodiversity conservation and utilization in agriculture and community forest management. The learning phases consist of (1) orientation on concepts, principles, methods, and tools; (2) case

studies practicum; (3) reflection and synthesis; and (4) oral presentations and case research writing.

Pakping Bruns (Environment Partnership, Thailand): Conservation curriculum for learning to protect and rehabilitate the forest is an education program designed to involve schools and students in forest management in Thailand. It is a step in preparing a community to establish community forestry. The program has realized the ideas of the King and the Queen of Thailand to support people to live in forest-friendly ways and obtain benefits from the forest. The education concept and context development is one of people participation and using forest, nature and trails as learning centers. The curriculum design is based on a creative learning process, delivered in a positive way to integrate one subject to another through a thought process. It connects indigenous knowledge, beliefs, religion and culture with modern knowledge and scientific methods towards managing and benefiting the use of natural resources while respecting nature and sustainability for future generations.

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Leila D. Landicho, et al (UP Los Banos, Philippines): Education institutions play a pivotal role in enhancing agroforestry development and promotion in communities. The lessons and experiences gained from the Agroforestry Support Program for Empowering Communities Towards Self-Reliance (ASPECTS) project of UP Los Banos demonstrate the viability and potential for fully realizing a sustainable community-managed agroforestry extension services with the collaborating schools as the lead institution in a multisectoral set-up. This was achieved through conducting capacity building activities, improving farmers' training facilities (i.e., demonstrations plots, nurseries, training curricula), improving schools' learning resources (i.e., library collections, laboratory/field facilities), conducting farm-based researches with the community people, and strengthening linkages among stakeholders. The project contributed to increased farm productivity and income, improved ecological stability in the communities, and more effective and efficient extension delivery system.



In four working group sessions, participants considered the relations between agroforestry and four large policy concerns: market-based economic development, poverty, climate change and environmental services, and decentralization/ governance. In all four areas, agroforestry was considered as being potentially relevant, at tree, farm, landscape and governance scale, respectively. Knowledge gaps, uncertainties and controversies in each of these four relations should stimulate relevant research – which will require disciplinary strengths and tools that go much beyond what has been so far the focus of agroforestry education. A substantial broadening of the approach is thus called for. SEANAFE and other educational networks are critical to create the needed synergy among the academe, government and private sectors towards promoting agroforestry in the uplands.

Themes and Issues and Suggested Actions Emerging from Conference Session Discussions

The issues and suggested actions enumerated here are a simplification of the rich discussions during the three conference sessions. This is also an attempt to surface areas of convergence among countries in the Southeast Asian region to emphasize the need for concerted efforts in addressing these themes and issues.

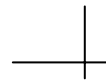
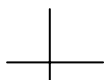
1. Agricultural intensification in the uplands and the expanding roles of agroforestry

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The notion of agricultural intensification and the expanding roles of agroforestry appeared to be the most recurring issues under Session 1 of the Conference.

Agricultural intensification has been regarded by many as a way to improve livelihood and secure food for farming households in the uplands. For it to be more effective, however, agricultural intensification requires big investments and various supports from governments. But caution must be taken when households start earning more wealth as a result of intensive diversification as it usually leads them to leave farming and move to a different source of income. This usually results to the collapse of even a mature farming system. It is therefore important to look at agricultural intensification more comprehensively considering socio-economic, cultural and environmental factors which affect household lifestyles. This may help determine what influences household's decision on what to do in the future and ensure proper returns on investments especially if they have the tendency towards diversifying their interest out of agriculture.

On the other hand, it may not be advisable to expand agriculture any further in the uplands as it is unrealistic to believe that the growing population in the upland could be sustained exclusively on agriculture. There seems to be a need to find ways to get people out



of agriculture as well for sustained livelihood. The challenge is to provide better non-farm opportunities for upland people, especially the youth, so that they can become increasingly self-reliant and sustain their livelihoods without depleting the natural resources. Gradually, this may reduce the pressure in the uplands but this may be a long term process.

The importance of agroforestry as a key component of food security and natural resource management strategy is recognized throughout the region. However, with the rapid economic development, very quick demographic changes, rising interest in environmental conservation and the concern for global climate change, agroforestry seems to be taking new roles and renewed importance throughout the world. Thus, there is a need to “think outside the box” as regards the science and practice of agroforestry in terms of its potential to help solve global socio-economic and environmental problems. This development presents great opportunities to capture good agroforestry knowledge and practices in the SEA region toward ascertaining its expanded roles and push them more prominently into the global development agenda. In here, learning institutions play a vital role to be more innovative in equipping the next generation of foresters and agriculturists with the ability to link knowledge to action and enable them to be active participants in national policy decision-making. It was further recognized that educational networks, such as SEANAFE, are critical to create the needed synergy among the academe, government and private sectors towards promoting agroforestry in the uplands.

2. Integration of upland communities into markets

Integration of upland communities into markets also solicited a good discussion during Sessions 1 and 2 of the Conference. For the uplands of Southeast Asia, markets are now being regarded as a major factor either for meeting conservation or development goals or both. In some conservation projects, market-based opportunities are being promoted toward establishing environmentally sustainable livelihood alternatives. On the one hand, rural farmers take advantage of these market opportunities to cope with the loss of resources particularly associated with protected area establishment. The seriousness of

the issue becomes much felt as farm lands become increasingly scarce for upland dwellers due to their growing population.

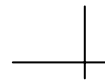
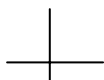
A question was then raised as to the type of policies that would help facilitate a community's transition into markets. Having a policy is a good idea but having concrete actions is much better to facilitate a community's transition into markets. It is more effective to have discussions among community people about what worked and what did not work in terms of getting access to certain types of markets. Then a policy can be formulated based on this bottom up approach. Having education and the right access to information, and facilitating farmer-to-farmer communication to share their knowledge and experiences would also help. On the other hand, crop diversification is another key factor to enable people to continue their agriculture practice in the long term.

3. Multi-stakeholder partnerships and high level of security to natural resource conservation and development

This emerged as a prominent theme in Session 2 of the Conference as evidenced by the failure of most governments in the SEA region to legally recognize communal forms of resource tenure and the skepticism of many policy makers towards the capacity of upland people to manage upland resources in a more sustainable way.

The converging idea was that the deadlock between upland conservation and development debate may be resolved if institutional challenges for co-management and stakeholder alliances could be properly addressed and the diverse interests and needs of multiple stakeholders, particularly with regard to land tenure issues, would be accepted and fully understood through realistic policy development and implementation.

The Conference also noted that development and policy problems in the uplands reflect the needs to (a) challenge knowledge uncertainties, myths, & overly simplistic perceptions; (b) expand the sustainability focus from ecological to social & economic dimensions; (c) understand households & communities as managers of asset portfolios; and (d) understand processes at different levels/scales and interactions among them. It also highlighted the importance of



using scientific tools and approaches beyond agriculture and forestry (e.g., psychology, economics, geography, anthropology, landscape ecology, political science, regional planning, etc.) to investigate local perceptions and decision-making in policy development, and building strategic alliances among stakeholders.

A related question was asked whether community forestry is a good policy toward environmental conservation in the uplands. The answer was not categorically “yes” as there are many factors to consider. These factors include among others the availability of adequate land, security of tenure, accessibility to markets, stable prices for the produce of the farmers, and availability of other social services to ensure that community livelihoods are sustainable and, in the process, allow them to conserve their environment.

4. The right tree in the right place

The issue that planting trees is not always related to conservation also drew a considerable discussion during Session 2 of the Conference. The main point was to choose the right kind of trees to plant in a particular area to help conserve biodiversity and water, protect the environment, avoid occurrence of diseases, and generate income.

5. Substantial assessment of Agroforestry Education

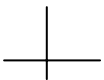
Session 3 discussions revealed that most universities and colleges in the SEA region offering agroforestry education were experiencing low trend in student enrolment. However, this concern was questioned vis-à-vis the vacant positions available to ensure employment of agroforestry graduates. The main point was the need to examine the quality of programs offered and also the number of institutions offering agroforestry courses.

While agroforestry science covers a wide range of drivers and processes that influence landscapes and livelihoods, the Conference surfaced several basic questions as regards the niche for agroforestry education. Why are there few learning institutions in the SEA region that offer programs in agroforestry? Why agroforestry education is generally assumed to fall within the forestry discipline? Is there really

INTEGRATING CONSERVATION

a demand for agroforesters? If so, who needs them? With the scope of agroforestry expanding due to the emerging social, economic, and environmental concerns, what are its boundaries? What should really constitute agroforestry as a science? In the absence of a globally accepted typology of agroforestry land uses, spatial data on AF is still weak and more empirical data are needed to critically scrutinize the general romanticism with respect to the potential benefits of AF and trees.

A substantial broadening of the content and teaching methods, and innovative structural changes in learning institutions engaged in agroforestry education are thus called for.



Annex A

List of Session Keynote Speakers and Paper Presenters

Speakers/Authors	Topic Title
Session 1: Striking a balance between food security and environmental conservation in the Southeast Asian agricultural uplands	
Keynote Speaker: Virgilio T. Villancio	Striking a balance between food security and environmental conservation in the Southeast Asian agricultural uplands
Paper Presenters:	
1. Le Quoc Doanh and Ha Dinh Tuan	Balancing food security and environmental conservation in the uplands: Vietnamese Experience
2. Pamela Crosby	Tourism and transformations in Banaue, Ifugao, Philippines: A case study of upland agriculture in transition
3. Aer Sirijinda , Suwanna Praneetvatakul and Pepijn Schreinemachers	Forest conservation through greenhouse agriculture by ethnic minority farmers in Northern Thailand
4. Nguyen Dinh Tien , Nguyen Thi Hai Ninh, Pham Thanh Lan	Economic performance of composite swiddening in Tat Hamlet in Vietnam
5. Carlito R. Rolera	Integrating tree crops, annual crops and natural rubber in an avenue cropping system: A

	sustainable soil conserving and poverty-alleviating agroforestry model in the Philippine uplands
6. Robin Roth	Market mania: An examination of rapid market integration as a strategy for environmental conservation and poverty reduction

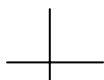
Session 2: Making more sense of past and present agroforestry and natural resources management policies and programs

Keynote Speakers:

1. Andreas Neef	Learning from failures and successes of policies and projects towards integrated watershed management in Southeast Asian uplands
2. Somchai Tasinga	Experience and lessons learned from rewarding environmental services in Thailand

Paper Presenters:

1. Tran Duc Vien and Nguyen Vinh Quang	Decentralization in forest management in Vietnam's uplands: Cases study in three communities
2. Prasnee Tirpaqsa and Pepijn Schreinemachers	Adaptation of farming systems to economic development: Agricultural commercialization of Karen hill tribes in Northern Thailand
3. Katherine R. Emans Sims	The effects of protected areas on land use and local economic development: Evidence from north and northeast Thailand



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| <p>4. Romulo T. Agganon,
Vellorimo J. Suminguit,
Ma. Victoria Espaldon and
Ma. Rowena Baltazar</p> | <p>Designing and implementing responsive information, education and communication strategies: The case of sustainable agriculture and natural resources management collaborative research support program in Southeast Asia</p> |
| <p>5. W. Bumbudsapharoke and
D. Moran</p> | <p>Introducing psychological-based theory to investigate the intention of farmers to adopt agri-environmental policy: A conceptual framework</p> |

Session 3: Redefining the niche of tertiary learning institutions in agroforestry and natural resources education

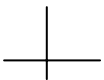
<p>Keynote Speaker: Per Rudebjer</p>	<p>Learning for managing multi-functional landscapes: An expanding niche for tertiary agroforestry and natural resources education?</p>
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Paper Presenters:

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| <p>1. Orlando Almoite</p> | <p>Sustaining quality in agroforestry education: The Don Mariano Marcos Memorial State University, La Union, Philippines experience</p> |
| <p>2. Budsara Limnirankul,
Phrek Gypmantsity and
Chorpaka Muangsuk</p> | <p>Learning to change in education from a community-based research partnership: Competence building for undergraduate students in community action research</p> |
| <p>3. Pakping Bruns</p> | <p>Conservation curriculum in Thailand: Blending local culture and knowledge with modern</p> |
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	science to enable school children to participate in forest management
4. Leila D. Landicho and Rowena D. Cabahug	The power of school-led multisectoral partnerships in agroforestry development and promotion in the Philippine uplands: Lessons and experiences

Note: names in bold letters were the presenters in co-authored papers.



SEANAFE

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