

Social and Sustainability Science in ASEAN International Conference 2018

23-25 January 2018
Chulalongkorn University
Bangkok, Thailand

Agri-Food Systems, Rural Sustainability and
Socioeconomic Transformations in Southeast Asia



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Social and Sustainability Science in ASEAN International Conference 2018

Agri-Food Systems,
Rural Sustainability and
Socioeconomic Transformations
in South-east Asia

23-25 January 2018

Chulalongkorn University, Bangkok, THAILAND

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Welcome address

Surichai Wun'gao, Chulalongkorn University

The first 18 years of the 21st century is exceptionally remarkable as we, as humanity, have been faced with increasingly difficult and complex challenges. The solutions and alternatives are ways ahead, but collaboration and most importantly, shared value and vision are needed. The most significant shared value now is concerns on “sustainability”.

As the oldest higher education institute in Thailand, Chulalongkorn University has brought this agenda of sustainability into our research, curriculum, academic affairs, and practices. We accept the multi-dimensional challenges of knowledge, including knowledge-policy interfaces. Several platforms have been organized in order to address these issues, some on conceptualizing and conceptualization, some on strategic directions and some on extracting lessons learnt from the ground.

This year, Thailand Office of the Higher Education Commission has partnered with Chulalongkorn University to create and promote ASEAN Network for Social and Sustainability Science which will be continuing in the next 5 years. This international conference on *Social and Sustainability Science in ASEAN 2018* will be one among a series of events that will bring various groups of stakeholders to our university to discuss these particular issues.

This conference with more than 100 participants from over 18 countries, will offer policy dialogues and panel discussions between 12 knowledge groups on sustainability relevant theme agri-food, rural sustainability and socioeconomic transition in South-east Asia. The knowledge sharing and participation within this event will represent a real collective action of academic community together with various sectors. It will also be a platform for ASEAN member's knowledge collaboration.

The organizing of this conference is initiated by Chulalongkorn University Centre for Peace and Conflict Studies, known by its facilitation skills among diversities. Above and beyond, close collaboration between Social Research Institute, best known as an institutional home of qualitative research with interdisciplinary character, and School of Agricultural Resource, as a leader for high education in agriculture, is solid groundwork to work in partnership with UNESCO Bangkok, Stockholm Environment Institute (SEI) and the Swedish International Agricultural Network Initiative (SIANI).

This task reflects that Chulalongkorn University is not only a local university but also focuses on its regional impact as well. As a global university, Chulalongkorn University wishes to secure its positive influence on society and respond to global, societal and environmental sustainability challenges.

As an instance for such a response to sustainability challenges, this conference will bring wider public discussion and novelty in the field of social and sustainability science. Gradually, it will bring us into the network of people who share concerns on sustainability and find ways to address the challenges of the 21st century, starting from local level to the national, regional and eventually global level.

It is such a pleasure to welcome you all to our university and to this conference.



Welcome address

Sue Vize, UNESCO Bangkok



As we move forward into the new era of the Sustainable Development Goals, the world has recognized the very central role of society in all fields of work. These goals are essentially about well-being by ensuring a liveable environment, decent livelihoods and inclusive societies. Sustainability science is a multi-disciplinary approach that also seeks to integrate social concerns with other technical concerns such as environmental quality, sustainable agriculture, greener energy systems and robust economies.

ASEAN has recognized the importance of this by including an initiative on social and sustainability sciences into their education plan. And we are very privileged that Thailand has taken the lead to implement this initiative through OHEC and the technical support of Chulalongkorn University. The region's higher education institutions must play a leading role to reorient education towards this more holistic approach. These institutions are leaders of research in the region. There is a lot to be done and we also need to focus on strengthening research capacities. They are also the centres that train the next generation of professionals. We need to equip them with a new skill set that not only recognizes changes in technology, but applies the findings from current research and enables them to pursue this new way of doing business where people are at the centre of all aspects of research, policy and projects.

This conference is the start of a dialogue that will cover a number of themes and work towards building stronger higher education institutions that work in partnership across the region and with other research institutions, government and the community. UNESCO is fully supportive of this initiative and looks forward to continuing the partnership as we build and shape this over the next four years.

Program Committee

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Kiat Ruxrungtham, Chulalonglongkorn University, Thailand

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Bharat Dahiya, Environment Development and Sustainability (EDS), Chulalongkorn University

Andrew Noble, Stockholm Environment Institute

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Introduction

This international conference was made possible with funding from the Office of the Higher Education Commission (OHEC) and Chulalongkorn University, Thailand. It has been organized in partnership with and technical support from UNESCO Bangkok, Stockholm Environment Institute (SEI), and the Swedish International Agricultural Network Initiative (SIANI) "Higher Education for Sustainable Agriculture (HESA) and Food Systems in Southeast Asia" Expert Group, hosted by Chulalongkorn University Centre for Peace and Conflict Studies, Social Research Institute, and School of Agricultural Resource. Many others have generously volunteered to assist or have contributed their time and expertise in different ways.

Why this conference? Modern, conventional agrochemical intensive agriculture integrated with a global agri-food system contributes to many interconnected global environmental problems (agrochemical pollution, biodiversity and species loss, climate change and greenhouse gas emissions, deforestation, depleting aquifers, desertification, drinking water jeopardy and contamination; drought, land degradation, soil loss and infertility; and more). Meanwhile malnutrition, hunger and poverty also persist amid other serious socioeconomic and health concerns. And at least 70 million people in Southeast Asia, 11.5 % of the population still do not have food and nutrition security. ASEAN regional policies and programs, as well as those of many governments in Southeast Asia, to address such urgent and complex problems have been inadequate.

This conference aims to explore such interrelated socioeconomic, cultural-educational, and agro-environmental challenges. It will assess progress and best practices in Southeast Asia to address knowledge gaps and practical problems through case studies, comparative analyses, and technical sessions. Academics will present related papers. Government and agency representatives will debate evidence, practical challenges, discuss best practices or sustainable alternatives for the agri-food systems, and explore new policy options.

Aside from a thematic focus on agri-food systems and rural sustainability this conference aims to bring greater attention to the importance of social and sustainability sciences, especially their contribution to agriculture research and education. The conference will also contribute to implementing Project 47 of the ASEAN Work Plan on Education (AWPE), 2016-2020 and more critical thinking about Sustainable Development Goals (SDGs).

Chulalongkorn University (CU) will publish proceedings in book of edited papers (subject to academic peer-review). It is hoped the planned results will provide useful multi-disciplinary scientific evidence and cross-sectoral learning to support more informed decision-making for sustainable agri-food systems and rural development among ASEAN policy makers, governments, university leaders, international agencies, farmers and others.

Program Structure

The program provides an opportunity for dialogue on key issues, presentation of papers and special sessions hosted by a range of partner organisations. Structured around the themes of the conference and the role of higher education in contributing to capacity building and research in these areas, each theme will have a mixture of sessions to ensure interaction and participation. Information on each session is provided in this booklet to guide participants in choosing sessions.

The policy dialogue sessions will stimulate discussion around key issues for each theme, whilst the parallel sessions will provide an opportunity to look into specific case studies to promote a multi-disciplinary and participatory approach to agri-food systems, rural sustainability and social transformations through higher education.

A side event will be held to launch the Thai Sociology and Anthropological Association.

There will be an opportunity for interested participants to take part in a networking meeting to discuss the idea of establishing an ASEAN social and sustainability sciences network.

The conference is complemented by pre- and post-conference events on skills building. The pre-conference training emphasizes communication skills for scientists, especially the use of social media. The post-conference training is a *MOST School* under the global Management of Social transformations program, which emphasizes good practices in relation to research-policy-community collaboration.

Schedule Day By Day

Tuesday, 23 January 2018

08:30 - 09:00	Registration		
09:00 - 09:15	Opening Ceremony		
	Pirongrong Ramasoota, Vice President for Social Outreach and Global Engagement, Chulalongkorn University		
	Chadarat Singhadechakul, Assistant Secretary-General for Higher Education Commission, Ministry of Education		
	Niall O'Connor, Director of Stockholm Environment Institute (SEI) Asia		
	Sue Vize, Regional Adviser for Social and Human Sciences for Asia and the Pacific, UNESCO Bangkok		
09:15 - 10:15	Keynote		
	Prof. Dr. Yongyuth Yuthavong, Former Deputy Prime Minister, Thailand		
10:15 - 10:45	Group Photo and Coffee Break		
10:45 - 12:15	Plenary Policy Dialogue (1): <i>Greening ASEAN Agri-Food Systems</i>		
12:15 - 13:30	Lunch		
13:30 - 15:00	Parallel Session (1)		
	<u>Session (1A): Room 802</u>	<u>Session (1B): Room 701</u>	<u>Session (1C): Room 702</u>
	<i>Sustainable Food Production in ASEAN</i>	<i>Discussion Forum on the Plant Variety Protection Act</i>	<i>Water (in)security and development in Southeast Asia:</i>
		<i>Revising</i>	<i>Inclusions, exclusions and transformation</i>
15:00 - 15:15	Coffee Break		
15:15 - 16:45	Parallel Session (2)		
	<u>Session (2A): Room 802</u>	<u>Session (2B): Room 701</u>	<u>Session (2C): Room 702</u>
	<i>Sociology and Anthropology in the Anthropocene</i>	<i>From Produce to Products: Economies of Scope in</i>	<i>Towards Organic Asia (TOA) panel discussion and</i>
		<i>Mixed Smallholders Agroforestry Systems</i>	<i>workshop 'Agroecology as new development</i>
			<i>path: food security for future generations.'</i> (I)
17:00 - 19:30	Reception Dinner		

Wednesday, 24 January 2018

08:30 - 09:00	Registration
09:00 - 09:45	Keynote
	Prof. Dr. Koichi Ikegami, International Rural Sociology Association (IRSA)
09:45 - 10:30	Plenary Policy Dialogue (2): <i>Ensuring Rural Sustainability in ASEAN</i>

10:30 - 10:45	Coffee Break		
10:45 - 12:15	Parallel Sessions (3)		
	<u>Session (3A):</u> Room 802	<u>Session (3B):</u> Room 701	<u>Session (3C):</u> Room 702
	<i>Working with Farmers to Achieve Sustainability</i>	<i>The Socioeconomic Transformation of the Agrarian Landscape in Asia: What does the future hold and the role of education?</i>	<i>Towards Organic Asia (TOA) panel discussion and workshop on 'Can organic agriculture feed Asia?' (II)</i>
12:15 - 13:30	Lunch		
13:30 - 15:00	Parallel Sessions (4)		
	<u>Session (4A):</u> Room 802	<u>Session (4B):</u> Room 701	<u>Session (4C):</u> Room 702
	<i>Bringing transformational Learning and Capacity Development to Universities in the Asia Pacific Region to Enhance Agricultural Innovation Systems</i>	<i>Community Rights, Sustainable Development and Rural Land Titling</i>	<i>Urban Agriculture and Food Sovereignty: Intersectional Justice</i>
15:00 - 15:15	Coffee Break		
15:15 - 16:00	Keynote		
	Prof. Dr. Stewart Lockie, James Cook University, Australia		
16:00 - 17:00	Plenary Policy Dialogue (3): <i>Promoting Socioeconomic Transformation in ASEAN</i>		
17:00 - 18:00	Sustainability ASEAN Community (networking meeting)		

Thursday, 25 January 2018

08:30 - 09:00	Registration
09.00 – 09.45	Prof. Walden Bello, Focus on the Global South.(FGS), Thailand
09.45 - 10:30	Plenary Policy Dialogue (4): <i>Strengthening Social and Sustainability Sciences in Higher Education, Research and Extension for Green, Climate Resilient Agri-food Systems in ASEAN to Meet SDGs</i>
10:30 - 10:45	Coffee Break
10:45 - 12:15	Parallel Sessions (5)
	<u>Session (5A):</u> Room 802
	Healthy Communities
	<u>Session (5B):</u> Room 701
	Effective Education for Greening Agri-food Systems and Rural Sustainability
12:15 - 12.30	Closing Remarks – The Future Social and Sustainability Science Community
12.30 - 13.30	Lunch

Keynotes

Location: Auditorium (Room 801)

Preceding each theme, international keynote speakers have been invited to provide an introduction to the topic and some thought provoking comments on the issues and current approaches to addressing these.



Prof. Dr. Youngyuth Yuthavong

Former Deputy Prime Minister, Thailand

Tuesday, 23 January 2018

09:15 - 10:15



Prof. Dr. Koichi Ikegami

International Rural Sociology Association (IRSA)

Wednesday, 24 January 2018

09:00 - 09.45



Prof. Dr. Stewart Lockie

James Cook University, Australia

Wednesday, 24 January 2018

15:15 - 16.00



Prof. Walden Bello

Focus on the Global South, Thailand

Thursday, 25 January 2018

09:00 - 09.45

Plenary Policy Dialogue Sessions

Location: Auditorium (Room 801)

The research-policy nexus is a key component of UNESCO's Management of Social Transformations (MOST) Program. There is growing body of work that demonstrates that good policy must be based on good evidence. But evidence alone is not enough. Unless we make connections between researchers and policy-makers we maintain a one-sided dialogue. The research-policy nexus is about bridging the gap and making these connections to facilitate both better research and better policy.

To further strengthen the research-policy nexus, it's also important to include the end-users in this dialogue. Community members such as farmers, rural townspeople and local municipalities have a vast amount of knowledge about their industries and communities. As the end-users, they are also the people who will participate in and be affected by the policy implementation. This means that the best approach to policy-making becomes a three-way dialogue.

The policy dialogue sessions during this conference provide an opportunity to have a discussion around each of the key themes considered during the conference. How is current policy lacking? How can research support addressing policy gaps? How can government become part of informing and directing the research? How can the wider community become part of the dialogue?

Preceding each theme, international keynote speakers have been invited to provide an introduction to the topic and some thought provoking comments on the issues and current approaches to addressing these.

Each session starts with a panel of speakers representing academia, government and the community. They will briefly share their thoughts on one aspect of processes for research production, consultation and policy-making. This will be followed by a moderated discussion.

The outcomes from this dialogue will inform the on-going initiative of Social and Sustainability Sciences in ASEAN, including the establishment of research proposals.

Tuesday, 23 January 2018

9.00 – 10.15

1 Opening Ceremony

Chair: Prof. Surichai Wun'gaao, Center for Peace and Conflict Study

Welcome addresses by

1.1 Pirongrong Ramasoota, Vice President for Social Outreach and Global Engagement, Chulalongkorn University

1.2 Chadarat Singhadechakul, Assistant Secretary-General for Higher Education Commission, Ministry of Education

Keynote Speech by

1.3 Prof. Dr. Youngyuth Yuthavong, Former Deputy Prime Minister, Thailand

10.45 – 12.15

2 Greening ASEAN Agri-Food Systems

There is no agreement on definitions of “green” or “sustainable” agriculture. But many efforts over a decade or more aimed to make food production and processing systems safer for farmers, consumers and environments while improving markets for green or organic products. Sustainable Development Goal #2 is committed to “End hunger, achieve food security and improved nutrition and promote sustainable agriculture.” Yet Southeast Asia is still a world leader in use of dangerous, unnecessary and banned agrochemicals, which pollute environments while endangering farmer and consumer health. Much modern industrial mono-crop agriculture also causes desertification, deforestation, drought, depleting aquifers, biodiversity loss and land degradation and may be the greatest contributor to climate change, from 20 to 30 percent or more of all greenhouse gas (GHG) emissions. Agrochemical-dependent industrial farming has still not provided food or nutrition security for at least 70 million people in Southeast Asia, 11.5 % of the population. There is much we still do not understand about these issues, why problems persist and what more can be done in response. This panel will reflect critically on such issues, practical challenges and opportunities for greening Southeast Asian agri-food systems.

Discussion Questions

1. What are the main obstacles, threats, barriers and practical challenges for greening Agri-food Systems in Southeast Asia?
2. What are the main policy issues that must be addressed to better enable the greening of Agri-food Systems among ASEAN Institutions and Working Groups, Member States and the Southeast Asian Region as whole?
3. What examples of best practices for greening Agri-food Systems already exist that can be improved, adapted to local circumstances and scaled up across the region?
4. How can governments, NGOs, academics, farmers and regional or international organizations better work together to green Southeast Asian Agri-food Systems? What existing or new dialogue, cooperation mechanisms exist, can be strengthened or should be established to assist?

Panelists:

2.1 Darian McBain, Thai Union, Thailand

2.2 Vichelle Roaring-Arunsuwannakorn, Asian Development Bank (ADB)

2.3 Suriyan Vichitlekarn, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

2.4 Sridhar Dharmapuri, Food and Agriculture Organization of the United Nations (FAO)

2.5 Supa Yaimuang, BioThai, Thailand

Moderator: Narumon Arunothai, Chulalongkorn University Social Research Institute (CUSRI), Thailand

Wednesday, 24 January 2018

9.45 – 10.30

3 *Ensuring Rural Sustainability in ASEAN*

Urbanization has continued apace for decades and is expected to continue this century while the sustainability of rural communities has been and remains threatened. Persistent challenges have included rising inequality between city and rural dwellers, agriculture mechanization and contract farming which can reduce decent jobs and small farm family incomes, and rural to urban migration putting further stress on the sustainability of cities. Urbanization of rural areas is also destroying many ecosystems, biodiversity and farmlands necessary to feed cities and rural communities alike. Corporate (private or state owned enterprise) “land grabs” of rural properties across Southeast Asia for non-agricultural development or large-scale farm exports often harm environments, while big companies take profits as many rural communities do not receive much benefit. Many larger mining or hydroelectric projects also endanger rural community livelihoods and food sources. Problematically some 70 to 80 per cent of the world’s hungriest, least food secure, poorest and most vulnerable groups are still small farmers and rural wage laborers. One big picture policy dialogue challenge for this panel to discuss is: how more inclusive and sustainable rural transformation be fostered to mitigate problems associated with urban-rural inequality while better supporting small farmers with decent incomes to sustain healthy local communities.

Discussion Questions

1. What are the main obstacles, threats, barriers and practical challenges to rural sustainability in Southeast Asia?
2. What are the main policy issues that must be addressed to better support rural communities, improve farm and off-farm livelihoods, curtail out-migration and reduce urban-rural inequality?
3. What are examples of best practices for rural sustainability in already exist that can be improved, adapted to local circumstances and scaled up across the region?
4. How can governments, NGOs, academics, farmers and regional or international organizations better work together to improve rural sustainability? What cooperation mechanisms exist on rural sustainability, can be strengthened or should be established?

Panelists:

- 3.1 Sucharit Koontanakulvong, Chulalongkorn University, Thailand
- 3.2 Helmi Helmi, Universitas Andalas, Indonesia
- 3.3 Daniel Ruiz de Garibay, World Rural Forum

Moderator: Amara Pongsapich, Chulalongkorn University, Thailand

16.00 – 17.00

4 *Promoting Socioeconomic Transformation in ASEAN*

Socioeconomic transformation in Southeast Asia over the past half century has been closely aligned with forces of globalization and trade regimes, while international or regional organizations, governments and communities have tried to mitigate adverse effects and better support local socioeconomic development. The new ASEAN Economic Community (AEC) launched in 2015 included food, agriculture and forestry as “priority integration sectors.” ASEAN is also committed to Narrowing the Development Gap (NDG) by promoting South-South Cooperation across all Member States especially among what it refers to as the CLMV (Cambodia Laos, Myanmar and Viet Nam). This could include improving agricultural development approaches as well as support for more sustainable rural policies and programs that look at rural communities in a more holistic manner, taking into account not only economic progress but well-being and sustainability of

rural communities. The big picture policy dialogue challenge for this panel to discuss is how inclusive socioeconomic transformation can be fostered to mitigate problems associated globalization while supporting healthy local communities.

Discussion Questions

1. What are the main obstacles, threats, barriers and practical challenges to healthy social and economic transformation in Southeast Asia, especially through agriculture?
2. What are the main policy issues (e.g. trade regimes, or economic priorities or investments) that must be addressed to better support alternative socioeconomic models that especially favor and empower small rural communities in ASEAN Member States?
3. What are examples of best practices of healthy socioeconomic transformation that can be improved, adapted to local circumstances and scaled up across the region?
4. How can governments, NGOs, academics, farmers and regional or international organizations better work together to strengthen healthy, community-based socioeconomic economic development?

Panelists:

- 4.1 Katinka Weinberger, United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)
- 4.2 Ladawan Kumpa, Secretariat of National Reform Committee on National Resources and Environment
- 4.3 Kamalinne Pinitpuvadol, United Nations Conference on Trade and Development (UNCTAD)
- 4.4 Wiput Pooncharoen, Policy Research and Development Institute Foundation (PRI), Thailand

Moderator: Surichai Wun'gao, Chulalongkorn University, Thailand

Thursday, 25 January 2018

9.00 – 10.30

5 Strengthening Social and Sustainability Sciences in Higher Education, Research and Extension for Green, Climate Resilient Agri-Food Systems in ASEAN to Meet SDGs

Good evidence, technical knowledge, skills and training in higher education institutions (HEIs) and research organizations are essential to better understand and enable green, climate resilient agri-food systems in Southeast Asia. Different disciplines or fields across social and sustainability sciences can help governments to monitor progress for meeting SDGs and provide necessary expertise for designing suitable project interventions or programs. However, among the 6500 or more HEIs in Southeast Asia we do not have good knowledge or documentation of their capacities and about what they teach. Global and national agriculture research organizations, including the CGIAR and its partners have cooperated sometimes with academics, agronomists, and social or sustainability scientists from many disciplines or fields but their work is also poorly understood by academia and governments. One big picture policy dialogue challenge for this panel is to discuss what HEIs are now doing to mainstream agri-food system education and research through social and sustainability sciences, and how this can be strengthened in partnership with CGIAR, APAARI and other agriculture research organizations.

Discussion Questions

1. What are the main obstacles, threats, barriers and practical challenges to documenting and improving agriculture education, research and training in higher education institutions (HEIs) and research organizations of Southeast Asia?
2. What are the main policy issues that must be addressed to better support higher education reform and the strengthening of social and sustainability sciences in particular?
3. What best practices in higher education innovation, reform and partnerships with farmers already exist, can be improved, adapted to in local circumstances and scaled up?

4. How can governments, NGOs, academics, farmers and regional or international organizations better work together to improve HEIs and strengthen capacities for agriculture and food systems education and research in Southeast Asia?

Panelists:

- 5.1 Dindo Campilan, International Center for Tropical Agriculture (CIAT), Viet Nam
- 5.2 Ravi Khetarpal, Asia-Pacific Association of Agricultural Research Institutions (APAARI), Thailand
- 5.3 Sue Vize, United Nations Educational, Scientific and Cultural Organization (UNESCO) Bangkok
- 5.4 Helmi Helmi, Universitas Andalas, Indonesia

Moderator: Wayne Nelles, Chulalongkorn University School of Agricultural Resources (CUSAR), Thailand

Parallel Sessions

Location: Room 701, 702, 802

The parallel session consist of different types of sessions. These include sessions where submitted papers will be presented, special sessions hosted by partner organisations and one side event.

Each parallel session includes one session for the presentation of academic papers submitted by participants and by invited speakers. These sessions follow each plenary policy dialogue, which introduces each of the sessions, and focus on the same thematic area. There will be four parallel sessions, one on each of the themes. Each session will have 5-6 presenters and a short period for discussion. These will run in parallel with the special sessions.

Hosted by a range of academic, international and community organisations, the special sessions provide an opportunity to delve more deeply into one aspect of each topic. The host organisations include Chulalongkorn University, the Stockholm Environment Institute, APAARI, ICRAF and Towards Organic Asia.

The next section of the book presents an overview of each session. These sessions without descriptions are the paper presentations, the special sessions each has a description. An overview of each special session and the side event follow in the next section of the book, with the abstracts in the following section.

Tuesday, 23 January 2018: 13.30 – 15.00

Location: Room 802

Session 1A: Sustainable Food Production in ASEAN

Session Moderator: Chika Shinohara, Momoyama Gakuin University (St. Andrew's University), Japan

Authors and Papers:

- 1A.1 Socioeconomic Transformation in South East Asia Driven by Conversion to Sustainable Agriculture: Initiative for an ASEAN+Global “Earth Trusteeship Platform”
Hans van Willenswaard, School for Wellbeing Studies and Research, Thailand
- 1A.2 Reconciling Equity and Resilience of Food Systems in Major River Deltas of South East Asia
Karpouzoglou Timos, Dewulf Art Warner, Jeroen Ahmed Farhana, Wageningen University, Netherlands, Hoang Long and Van Pham Dang Tri, Can Tho University, Vietnam
- 1A.3 Thailand’s Community Rights Act for Karen Minorities in Protected Areas
Aschara Chinniyompanich, Macquarie University, Australia
- 1A.4 Understanding Agrobiodiversity in Urban Market: A Comparative Study of Crop Species and Varietal Diversity in Traditional Wet Market and Supermarkets in Cau Giay District, Hanoi
Laxmi Lama, Stef de Haan and Jessica Raneri CIAT, Biodiversity International
- 1A.5 Beyond Food: the Future of Home Gardens in Thailand
Pin Pravalprukskul, Stockholm Environment Institute (SEI)

Tuesday, 23 January 2018: 13.30 – 15.00

Location: Room 701

Session 1B: Discussion Forum of Plant Variety Protection Act Revising

Farmer rights to access certain plant varieties are going to be a hot issue when the Department of Agriculture (DOA) revises the Plant Variety Protection Act by applying UPOV1991. UPOV1991 has been criticized by farmers and civil society organizations around the world, who claim that it protects the intellectual property of scientists and corporations, but ignores farmers’ rights. Farmers and the civil society movement are resisting the revision due to concerns that transnational corporations will seize and monopolize local plant varieties, which are important in local food production and food security.

To support wider consider of the issues, the Chulalongkorn University Social Research Institute is hosting a public academic forum on 23 January, including presentations from key speakers such as, Witoon Liamchumroon (BIOTHAI), intellectual property law specialists, and local farmers. The session will be an opportunity to discuss the impact and potential solutions for a Plant Variety Protection Act that considers the right of Thai farmers and food security in Thailand.

Session Organizer: Prapart Pintobtang, Chulalongkorn University Social Research Institute (CUSRI), Thailand

Panelists:

- 1B.1 The Discussion of Plant Variety Protection Act in Thailand and Global
Witoon Lianchamroon, BioThai, Thailand
- 1B.2 The Real World of Plant Variety Protection Act and Farmer
Boonsong Madkow, Farmer Leader, Kut Chum, Yasothon Province, Thailand
- 1B.3 Farmers livelihood in Transformation
Prapart Pintobtang, Chulalongkorn University Social Research Institute (CUSRI), Thailand
- 1B.4 Community in a Changing World
Kritsada Bunchai, Local Development Institute, Thailand
-

Tuesday, 23 January 2018: 13.30 – 15.00

Location: Room 702

***Session 1C: Water (In)Security And Development In Southeast Asia:
Inclusions, Exclusions And Transformation***

This panel considers conflicts over access to, control over and use of water and natural resources at scales ranging from the interstate to the individual. We consider the implications of deepening market integration into resource use and governance, and how it produces exclusions for some to the benefit of others. We explore the implications of large-scale developments tied to regional economic integration both in Southeast Asia, such as large-scale dams. We also focus on the extension of market relations at a more local scale, and how this entails “intimate” processes of exclusion that contrast with the more high-profile and more overtly violent exclusions.

Session Organizer: Carl Middleton, Center for Social Development Studies, Chulalongkorn University, Thailand

Panelists:

- 1C.1 Gender and the Mekong River: Inclusions and Exclusions
Kanokwan Manorum, Ubon Ratchathani University, Thailand
- 1C.2 Intimate Water Exclusion: Processes and Politics of River Enclosure by Fish Cage Aquaculture in Northeast Thailand
Soimart Rungramee, Thammasart University, Thailand
- 1C.3 Rights and Rites: Community Water Resource Governance on the Salween River in Karen State, Myanmar
Saw John Bright, Karen Environmental and Social Action Network (KESAN), Myanmar
- 1C.4 Access to Water in Hakha Town, Chin State, Myanmar: Structural Violence and the Politics of Water Insecurity
Carl Middleton, Chulalongkorn University, Thailand
-

Tuesday, 23 January 2018: 15.15 – 16.45

Location: Room 802

Session 2A: Sociology and Anthropology in the Anthropocene (side event)

Beginning with an historical perspective through the opening dialogue, two senior researchers, Amara Pongsapich and Chayan Vaddhana-Phuti, will present their introductory thoughts on “Sharing Visions among Knowledge Communities”. The proposal to initiate ThaiSAA (Thai Sociology and Anthropological Association) will be presented by Surichai Wun’gao. This will be followed by a seminar “Anthropocene Sociology and Anthropology: In the Wave of Global Change”, an intersectional and interdisciplinary roundtable talk. A closing speech “Bridging Knowledge Diversity: Unity among Local and Global” by Stewart Lockie would weave together the role of public sociology in a transitional context to discuss the ability of knowledge networks and collective effort to shape society.

Session Organizer: Surichai Wun’gao, Chulalongkorn University, Chohnapa Anukul, JuSNet and Sayamol Charoenratana, CUSRI, Thai Sociological and Anthropological Association (ThaiSAA), Thailand

Opening Dialogue: Sharing Visions among Knowledge Community

Amara Pongsapich, Chulalongkorn University, Thailand

Chayan Vaddhana-Phuti, Chiang Mai University, Thailand

Introduction: Sustainability of Thai Sociological and Anthropological Collectiveness

Surichai Wun’gao, Chulalongkorn University, Thailand

Roundtable Talks: Anthropocene Sociology and Anthropology: in the Wave of Global Change

Chol Bunnag, Thammasat University, Thailand

Kanokwan Manorom, Ubon Ratchathani University, Thailand

Paritta Wangkiat, Thai Society of Environmental Journalist, Thailand

Moderator: Pasakorn Inthuman, Mahidol University, Thailand

Closing Speech: Bridging Knowledge Diversity: Unity among Local and Global

Stewart Lockie, James Cook University, Australia

Tuesday, 23 January 2018: 15.15 – 16.45

Location: Room 701

Session 2B: From Produce to Products: Economies of Scope in Smallholders’ Mixed Agroforestry Systems

Economies of scope are achieved when costs of production decrease as a result of increasing the number of different goods produced. In mixed farming systems, this is easily achieved through the synergies of different components of the systems that result in higher land equivalent ratios: fertilizer applied to crops also increases productivity of trees; manure produced by livestock provides fertilizer to crops; trees can improve soil fertility as well as providing timber, firewood, food, medicines and products to people; and many tree species provide shade or fodder for livestock. Further, product diversification decreases risks of production and price uncertainties. Unfortunately, sustainability of smallholders’

agricultural systems is often understood as achieving economies of scale through increasing productivity per hectare, with less consumption of land, water and fertilizer, which often results in intensified mono cultural systems.

Agroforestry as a land-use system has been widely acknowledged for its potential to support the resilience of rural communities, often supporting communal rights to forest land and other natural resources, with a positive impact on climate-change mitigation and adaptation and on biodiversity. Independently and under ASEAN initiatives, some Southeast Asian nations are mainstreaming agroforestry into national and sub-national policies and planning. Farmers, however, when presented with options for intensive mono cultural systems often switch to these because of perceived lower risk owing to a) more developed value chains that leave farmers less vulnerable to market fluctuations and reduce transaction costs; b) perceived lower labor requirements; c) access to supporting services, such as extension and advice, credit and, sometimes, climate-risk insurance. This panel explores ICRAF's work with numerous partners on these themes.

Session Organizer: ICRAF, World Agroforestry Centre

Panelists:

- 2B.1 Setting the Scene: Economics of Scope in Smallholders' Agroforestry Systems
Anja Gassner, World Agroforestry Centre
- 2B.2 Economic Returns, Resilience and Sustainability for Smallholders' Mixed Agroforestry Systems in Indonesia
James M. Roshetko, World Agroforestry Centre
- 2B.3 Tipping the Balance for Ecosystem Services through Collective Action: the Philippine Landcare Experience
Delia Catacutan and Agustin Mercado Jr, World Agroforestry Centre
- 2B.4 Decreasing Transaction Costs: Smallholders' Market Systems that Work for Diversified Farming Systems
Aulia Perdana, World Agroforestry Centre
- 2B.5 Supporting the Enablers: South-To-South Learning Networks for Sharing Agro-Ecological Knowledge
Robert Finlayson, World Agroforestry Centre

Tuesday, 23 January 2018: 15.15 – 16.45

Location: Room 702

Session 2C: The Development Path Agroecology: Food Security for Future Generations

Towards Organic Asia (TOA) is a participatory network to advance organic agriculture and agroecology with core partners in the Mekong region and a growing network Asia-wide. The mission of TOA is "Organic Food for All". Partners will discuss challenges and progress on organic agriculture and agroecology from different countries and perspectives. This is the first of two sessions.

Session Organizer: Towards Organic Asia (TOA) Movement

Panelists:

- 2C.1 Country Assessment and Policy Advocacy to Promote Agroecology. Can Participatory Action Research Generate Positive, Agroecology Based, Development Scenarios in the Context of Broader Conflict Transformation?
Sai Sam Kham, Metta Development Foundation, Myanmar
- 2C.2 Securing Indigenous Land Rights by the Recognition of Customary Law; and the Importance of Seeds Saving for Biodiversity. Finding Appropriate Social Entrepreneurship Models for Indigenous Peoples in Viet Nam.
Dang To Kien, CENDI/SPERI, Viet Nam
- 2C.3 Comparing Wellbeing Between Organic and Chemical Farmers. Why Social Engagement Leads to More Happiness and Better Economic Benefits
Kaedtisak Yangyuen, Alternative Agriculture Network (AAN), Myanmar
- 2C.4 The Growing TOA Young Organic Farmers' (YOF) Movement + Video Project Supported by Alisea / GRET
Narumon Paiboonsittikun and Kittikhun Bhukhonkha, TOA, Thailand

Wednesday, 24 January 2018: 10.45 – 12.15

Location: Room 802

Session 3A: Working With Farmers to Achieve Sustainability

Session Moderator: Suthirat Kittipongvises, Environmental Research Institute, Chulalongkorn University, Thailand

Authors and Papers:

- 3A.1 The Importance of Farmer Perception Towards Ecological, Social Economy and Ethical Urgency as Component of Sustainable Horticulture Practices
E. Euriga, S. Amanah, P. S. Asngari, A. Fatchiya, Yogyakarta, Agricultural Extension College, Ministry of Agriculture of Republic of Indonesia
- 3A.2 Lake Buhi: Where Has All The Water Gone?
Arthur B. Estrella, Central Bicol State University of Agriculture, Phillipines
- 3A.3 Land Resettlement Scheme in Malaysia: Lessons from Felda Bukit Goh, Kuantan
Syahaneem Binti Mohamad Zainalabidin, Institute of Agricultural and Food Policy Studies, Universiti Putra Malaysia
- 3A.4 Changing Rural Livelihoods in South East Asia: Constraints and Opportunities
Mokbul Morshed Ahmad, Asian Institute of Technology (AIT), Thailand
- 3A.5 Estimating Non-Co2 Greenhouse Gas Emissions from Field Burning of Crop Residues in the Philippines: 1990-2015
Jose Hermis P. Patricio, Central Mindanao University
- 3A.6 Financing Farm-to-Market Road Development for Rural Sustainability: the Case of Tobacco Excise Taxation in the Philippines
Venelyn Bersamira, Raffy M. Espiritu, Jaime I. Manuel Jr., Grace S. Nisperos, Adriano T. Esguerra, Dexter P. Licay, Bacnotan, La Union, Philippines

Wednesday, 24 January 2018: 10.45 – 12.15

Location: Room 701

Session 3B: The Socioeconomic Transformation of the Agrarian Landscape in Asia: What Does the Future Hold and the Role of Education?

Over the past four decades the agrarian landscape of Asia has undergone a quiet, but at times turbulent transition, that has affected the social fabric of rural communities, economies of countries and the ecological attributes associated with natural resources and their use. This transformation has invariably resulted in the emergence of more complex household structures where farm incomes are no longer the dominant source, (i.e. the emergence of a “remittance landscape”); a geriatrified farming community with youth leaving the farm for better opportunities; and women becoming the mainstay of the farm economy.

The session will explore the transformation of the agrarian landscape and the social impacts, implications and future trends. This will be achieved through a keynote and three presentations that will lead into a facilitated panel discussion.

Session Organizer: Andrew Noble (Stockholm Environment Institute (SEI)) and Chantana Banpasirichote Wungaeo, (CUSRI)

Keynote Address: The Past, Present and Future of the Smallholder in Asia

Jonathan Rigg, Asia Research Institute and Geography Department, National University of Singapore.

Panelists:

- 3B.1 Coops and Contract Farming: Institutional Incentive Structures that Work, and those that Don't.
Daniel Ray Lewis, Chulalongkorn University.
- 3B.2 Emerging Export-Oriented Horticulture and Intensification of Cropping Systems in Myanmar
Koji Kubo, Chulalongkorn University
- 3B.3 Exploring the Motivation of Smallholder Farmers to Shift to More Sustainable Agricultural Production Systems in Thailand
Waripas Jiumpanyarach, Chulalongkorn University

Wednesday, 24 January 2018: 10.45 – 12.15

Location: Room 702

Session 3C: Can Organic Agriculture Feed Asia?

Towards Organic Asia (TOA) is a participatory network to advance organic agriculture and agroecology with core partners in the Mekong region and a growing network Asia-wide. The mission of TOA is “Organic Food for All”. Partners will discuss challenges and progress on organic agriculture and agroecology from different countries and perspectives. This is the second of two sessions.

Session Organizer: Towards Organic Asia (TOA) Movement

Panelists:

- 3C.1 The 100% Organic Agriculture by 2020 Policy of Bhutan and How the Newly Developed Bachelor's Degree Course in Organic Agriculture Can Contribute to this Vision.
Tashi, Royal University of Bhutan (RUB), Bhutan
- 3C.2 Major Challenges for Organic Farmers in Laos and Ways to Tackle Problems Together
Chanthalangsy Sisouvanh, Rural Development Agency (RDA), Laos
- 3C.3 Benefits of System of Rice Intensification (SRI) and Organic Seeds Cultivation For Farmers in Cambodia from a Global Perspective.
Sam Vitou, CEDAC, Cambodia
- 3C.4 Consumer – Producer Collaboration and Social Enterprise Training for Food System Leadership: Asia-Wide Networking Towards Food Literacy and Socio-Economic Transformation. Can We Outscale Community Supported Agriculture (CSA) Towards (Larger Scale) Consumer – Producer Cooperatives?
Wallapa van Willenswaard, TOA, Thailand

Wednesday, 24 January 2018: 13.30 – 15.00

Location: Room 802

Session 4A: Bringing Transformational Learning and Capacity Development to Universities in APR to Enhance Agricultural Innovation Systems

Innovation in agriculture is critical for feeding the world's growing population and is fundamental to achieving the Sustainable Development Goals (SDGs). Yet, it has been dominated by the view that relevant knowledge is generated by research and passed on to the extension system for adoption by farmers through a linear process of technology transfer. This approach has largely failed to tackle contemporary complexity of agricultural development embedded in the interaction of socio-economic and environmental factors. Addressing these complexities requires different set of skills and mind set, multi-stakeholder interaction, as well as functional capacities (soft skills) to improve the existing processes that accelerate innovation.

In agricultural and life science schools and universities, comprehensive transformational learning and student leadership development is needed, to develop not only academic knowledge, but also intellectual, professional, physical, spiritual and emotional aspects of the students. The session will explore the transformational approach being adopted to inspire, guide and equip students with the knowledge, skills and attitudes to meet their aspirations, access resources and grow into qualified, skilled and knowledgeable graduates capable of realizing their individual potential. The topic will be explored through a keynote and three presentations that will lead into a facilitated panel discussion.

Session Organizer: Asia-Pacific Association of Agricultural Research Institutions (APAARI)

Keynote Address: Strengthening the Capacity of the Higher Education Sector through Changing the Mindsets About Capacity Development to Improve Agricultural Innovation Systems.

Ravi Khetarpal, APAARI.

Panelists:

- 4A.1 Common Framework on Capacity Development for Agricultural Innovation Systems (CD For AIS)
Martina Spisiakova, APAARI & Tropical Agriculture Platform (TAP)
- 4A.2 Transformational Learning and Student Leadership Development to Achieve the SDGs.
Iman El-Kaffass, GFAR.
- 4A.3 Soft Skills and Ethical Leadership to Prepare Graduates to Become Catalysts of Change
John Kennelly, GCHERA.
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Wednesday, 24 January 2018: 13.30 – 15.00

Location: Room 701

Session 4B: Community Rights, Sustainable Development and Rural Land Titling

In the context of Sustainable Development and the rural world of Southeast Asia, there have been several important initiatives of very much conceptual and policy relevance. Three cases are presented to demonstrate a community movement in negotiating for community right of local people in using forest land, their strategies and challenges in advancing the concept in different political and cultural contexts.

Session Organizer: Chayan Vaddhanaphuti, Chiang Mai University and Surichai Wun'gao, Chulalongkorn University

Panelists:

- 4B.1 Communal Land Title Registration: Cambodian Government Effort to Secure Indigenous People Land
Thol Dina, Ministry Of Land Management, Cambodia
- 4B.2 Customary law based community forest land and livelihood sovereignty of highland indigenous ethnic minorities.
Dang To Kien, CENDI/SPERI, Viet Nam
- 4B.3 Ecology Knowledge and Practice in Special Space of Cultural Zone for Cultural and Community Rights in Karen Community in Northern Thailand
Prasert Trakansuphakon, PASD, Chiang Mai, Thailand
- 4B.4 An exploration into the conceptualization and materialization of (living) cultural protected areas in Thailand
Narumon Arunotai, Chulalongkorn University, Thailand
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Wednesday, 24 January 2018: 13.30 – 15.00

Location: Room 702

Session 4C: Rural Agriculture Transformation and Food Security: Sustainable Agriculture Justice

The face of rural communities and small towns is changing as our agricultural production systems change. Small scale farmers were lifted out of extreme poverty in the past decade. Farming systems were changed by top down policies reflecting global trends. This has impacted food producers and food consumptions. Farmers are central to achieving food security or food safety in the world. These farmers are faced with numerous problems including poverty, lack of opportunity and limited to access resources. In the midst of today's global changes, the needs of producers and consumers are also changing, so finding a way to strengthen agricultural security is essential.

Session Organizer: Sayamol Charoenratana, Chulalongkorn University Social Research Institute (CUSRI), Chulalongkorn University, Thailand

Panelists:

- 4C.1 Bio-Diversity and Food Security Impacts Assessment of Krabi Coal Power Plant Project
Chainarong Sretthachau, Mahasarakham University, Thailand
- 4C.2 Organic Farming: the Window for the Future Farmer
Tansiphorn Janhom, Chulalongkorn University, Thailand
- 4C.3 Drivers And Constraints of Conversion to Organic Farming in the Kingdom of Bhutan
Parladh Mahat, Chulalongkorn University, Thailand
- 4C.4 Remote Farmers in the Changing World: How to Building Sustainable Food Systems?
Sayamol Charoenratana, Chulalongkorn University Social Research Institute (CUSRI), Chulalongkorn University, Thailand

Thursday, 25 January 2018: 10.45 – 12.15

Location: Room 802

Session 5A: Healthy Communities

Session Moderator: Katja Rangsidek, Burapha University, Thailand

Panelists:

- 5A.1 Peri-Urban Agriculture Development in Hanoi City: Food Security, Food Safety and Gender Dimensions
Nguyen Phuong Le, Nguyen Mau Dung, Viet Nam National University of Agriculture
- 5A.2 Health Food Tradition of Asia: A Case Study from the HFTA Project
Eni Harmayani, Umar Santoso, Anil Kumar Anal, Santad Wichienchot, Wirote Youravon, Rajeev Bhat, Murdijati Gardjit, Universitas Gadjah Mada (UGM) Indonesia, Asian Institute of Technology (AIT) Thailand, Prince of Songkla University (PSU) Thailand, University Sains Malaysia (USM) Malaysia
- 5A.3 Representations of Good and Safe Food for Consumers in Myanmar and Viet Nam and Market Opportunities

for Safe and Environmentally-friendly Agricultural Products

Renaud Guillonnet, Isabelle Vagneron, and Pierre Ferrand, GRET and Agricultural Research Centre for International Development (CIRAD) Lao PDR

- 5A.4 Division of Labor among Innovation Intermediaries in Agricultural Innovation Systems: a Case of Indonesia
Nobuya Fukugawa, Masahito Ambashi, Phuong Le Suhud, Tohoku University, Japan and Economic Research Institute for ASEAN and East Asia (ERIA), Indonesia
- 5A.5 Innovating Farm-to-Market Road Design in Upland Production Areas of the Philippines for Rural Sustainability and Socio-economic Transformation
Raffy M. Espiritu, Jaime I. Manuel Jr., Adriano T. Esguerra, Don Mariano Marcos Memorial State University, Bacnotan

Thursday, 25 January 2018: 10.45 – 12.15

Location: Room 701

Session 5B: Effective Education for Greening Agri-Food Systems And Rural Sustainability

Session Moderator: Pichaya Surapolchai, Chulalongkorn University Social Research Institute (CUSRI), Chulalongkorn University, Thailand

Authors and Papers:

- 5B.1 Climate Smart Field School: The Bicol Agri-Water Project's Extension Modality For Adapting To Climate Change In Rice Farming
Cely S. Binoya, Agnes C. Rola, Annalyn O. Agua, Sarah D. Sambajon Asia-Pacific Association of Educators in Agriculture and Environment (APEAEN): University of the Philippines at Los Banos, Central Bicol State University of Agriculture (CBSUA), Bicol University College of Agriculture
- 5B.2 Capacity Development For Agricultural Innovation – Bringing System-Wide Change In Asia-Pacific Through Building Soft Skills In Higher Education
Martina Spisiakova, Asia-Pacific Association of Agricultural Research Institutions (APAARI)
- 5B.3 Greening Agri-Students Through Creative Pedagogies
Joy Membreve Jamago, Central Mindanao University, Philippines
- 5B.4 Rejuvenating Agriculture: Keeping Young Farmers in the Field
Daniel Ruiz de Garibay, Universitas Indonesia, Indonesia
- 5B.5 Investigating in the Translating of Science
Cheryl Sjöström, Lund University, Sweden

Post-Conference Session

Location: Room 317, 4th Floor, Chulalongkorn University Social Research Institute (CUSRI)

The first MOST school in Thailand will be organized back to back with the Social and Sustainability Science in ASEAN International Conference 2018: Agri-Food Systems, Rural Sustainability and Socioeconomic Transformations in South-east Asia - A Multi-disciplinary Research Initiative, contributing to the ASEAN WORK PLAN on EDUCATION (AWPE), 2016-2020 and United Nations Sustainable Development Goals (SDGs), 2015-2030 to be held at Chulalongkorn University

The participants of MOST school will attend the international conference on 23-25 January 2018 then join academic and capacity building session together with a fieldtrip from January 26-28, 2018.

Further information including registration information can be found at the conference website
<http://www.cusri.chula.ac.th/?event=agri-food-conference>

Abstracts

Alphabetical Listing of First Authors

AHMAD, MOKBUL MORSHED, Asian Institute of Technology (AIT)

Changing Rural Livelihoods in South-east Asia: Constraints and Opportunities

From a discussion covering seven Southeast Asian countries, it can be argued that people's livelihoods throughout the region have significantly changed in the past decades. Several findings emerged during a recent review of rural livelihoods. These included: climate and food security is likely to impact the whole region, where the rural population will be worst affected, especially in the least developed nations; gender equality issues persist throughout the region; and there is a significant difference in access to the internet. Hence, with these findings, one can conclude that people's livelihoods and the level of development has been affected by the interlinked social, political, economic and political factors of each nation.

ARUNOTAI, NARUMON, Research Unit on Indigenous Peoples and Alternative Development, Social Research Institute, Chulalongkorn University

An Exploration into the Conceptualization and Materialization of (Living) Cultural Protected Areas in Thailand

Indigenous and local communities that have not been entirely integrated into mainstream economy and consumerist society are losing physical, cultural and spiritual grounds. Several Chao Lay or indigenous sea people communities in southwestern Thailand that made the news headlines due to conflicts with tourism businesses and industries reflected marginalization in the modern age. In terms of physical change, Chao Lay houses were relocated inland in order to free up beaches and seaside space for tourists' pleasure. Their boat mooring areas and sheds for keeping and repairing fishing tools have also been displaced. In terms of spiritual grounds, their cemetery, sacred shrines and ritual areas were either disrupted, removed, or built upon. While different forms of development marginalize indigenous communities, different forms of conservation also displace them. Several Karen indigenous communities found themselves in the reserved forest and national parks. In other words, it is "development and conservation by displacement and dispossession". This kind of displacement and dispossession not only creates continuous conflict, it also destroys and devalues cultural lives that, for centuries, have gradually accumulated local knowledge suited for their ecologies. These clear threats instigate the conceptualization of "special cultural zones" that aims to protect cultural communities and the concept was endorsed through two Thailand Cabinet Resolutions in 2010 on the revitalization of the Chao Lay and the Karen. Consequently, several Karen and Chao Lay communities rose up and declared their communities "special cultural zone". Nevertheless, such action received little or no attention and support from government agencies. Several civil society organizations and academics working on marginalized indigenous and ethnic groups thus prepare to draft an act on "Cultural Protection Areas for Ethnic Groups" in order to materialize the concept. This presentation will explore the conceptualization and materialization of cultural protected areas in Thailand mainly through the cases of Chao Lay communities.

BERSAMIRA, VENELYN, Bacnotan, La Union, Philippines
 EPIRITU, RAFFY M., Bacnotan, La Union, Philippines
 MANUEL JR., JAIME I., Bacnotan, La Union, Philippines
 NISPEROS, GRACE S., Bacnotan, La Union, Philippines
 ESGUERRA, ADRIANO T., Bacnotan, La Union, Philippines
 LICAY, DEXTER P., Bacnotan, La Union, Philippines

Financing Farm-to-Market Road Development for Rural Sustainability: the Case of Tobacco Excise Taxation in the Philippines

Financing has been a persistent challenge in sustainable rural development. Rural infrastructure such as road network improvements is a pivotal support arm in ensuring rural sustainability. The Philippine government has annually devoted budgetary allocations for the construction of farm-to-market roads (FMR) with the objective of improving rural access, promoting inclusive growth and ensuring socio-economic transformation in the countryside. Yet it remains a major challenge in the Philippines given its varied geographic terrain and more than 7,000 island configuration.

The construction of this vital rural infrastructure was strengthened with the enactment of the Agriculture and Fisheries Modernization Act among other significant legislations to modernize the Philippine Agriculture sector and make it competitive among its ASEAN neighbouring states. A further enabling law that supported the development of FMR project is Republic Act No. 7171 otherwise known as the Tobacco Excise Tax Law and its subsequent amendatory versions.

This study focused on analysing and tracking the contribution of leveraging tobacco excise tax as a source of project financing for FMR development in the country. The objective is to generate inputs for policy updating, guideline improvement and more effective program implementation

BINOYA, CELY S., Asia Pacific Association of Educators in Agriculture and Environment
 ROLA, AGNES C., University of the Philippines at Los Banos
 AGUA, ANNALYN O., College of Public Affairs and Development, Philippines
 SAMBAJON, SARAH D., University College of Agriculture, Philippines

Climate Smart Field School: The Bicol Agri-Water Project's Extension Modality for Adapting to Climate Change in Rice Farming

The project "Water Security Under Climate Risks: A Philippine Climate Change Adaptation Strategy for the Agriculture Sector" dubbed as the Bicol Agri-Water Project (BAWP) was implemented from September 2012 to September 2017 with funding from USAID. It aimed to improve water security towards enhanced agricultural development under climate variability and change. It envisioned to showcase climate change adaptation strategies within rice farming communities and promote improved watershed management strategies. The project sites include the Buhi-Barit Watershed Reservation of Buhi, Camarines Sur and Quinala a watershed of Polangui, Albay purposely to minimize the effects of climate hazards on lowland rice farming communities of Nabua, Camarines Sur.

One of three intermediate outcomes of the project was to enhance capacities of farmers to adapt to climate variability and change. To achieve this, the project implemented the Climate-Smart Field School (CFS) for two years covering two wet and dry season cycles in the three project sites. It involved 629 farmers from 14 barangays, 5 barangays in Buhi with 224 farmers, 4 in Nabua with 185 farmers and 5 in Polangui involving 220 farmers.

The implementation strategies of the CFS focusing on the shift from the ordinary Farmer Field School to the CFS, and the

climate change adaptation strategies including the introduction of the hazard - cropping calendar, climate change suitable rice varieties, alternate wetting and drying as an irrigation strategy, vermi-composting as source of organic fertilizer, installation of small scale irrigation systems, the development and institutionalization of the Climate Outlook and Extension Advisory (CLEA), among others, were discussed.

The sustainability mechanisms, including the passage of local ordinances to institutionalize the CFS, Farmers' Organization and registration, farmers' meetings and technology sharing strategies / cross visits, conduct of various trainings such as leadership and enterprise development and management, rainwater collection and recording, trainings on alternative livelihood technologies, and the development and publication of the CFS Modules for Lowland and Upland Farming Systems for wide dissemination and use by the Department of Agriculture - Agricultural Training Institute will be covered by this paper.

The paper will also discuss the monitoring and evaluation schemes used by the project which include the tools for monitoring changes in technology practices, changes in gender roles in rice farming and its effect on yield and income of farmers as outcomes of the enhanced capacities of farmers to adopt to climate variability and change.

BINTI MOHAMAD ZAINALABIDIN, SYAHANEEM, Universiti Putra Malaysia, Malaysia

Land Resettlement Scheme in Malaysia: Lessons from FELDA Bukit Goh, Kuantan

FELDA (Federal Land Development Authority) settlement schemes have become a milestone in the history of Malaysia's land development and settlement. Through this scheme, FELDA has helped to build a structured rural community of settlers that has progressed well allowing the settlers to become the owner of not only housing land but also farmland. After more than six decades of its establishment, these settlement schemes are facing numerous challenges mainly related to the urbanization, ageing settlers, land ownership issues, land conversion issues, second generation issues and underutilization of land that must be seriously taken into consideration to ensure the sustainability of the scheme. This study assessed the current state of one of the FELDA settlement schemes which is FELDA Bukit Goh. The sustainability of this palm oil settlement scheme is at risk with the recent issues related to conversion of the farm to bauxite mining. The affected area has escalated other related issues; the mining is done unlawfully and the state government decided to temporarily ban the mining work, and production of palm oil in the neighboring mining area is adversely affected. Bukit Goh is facing formidable difficulties in terms of future oil palm replanting as farm that had been converted to bauxite mining might not be suitable to be replanted with oil palm. This study combined both quantitative and qualitative approach to examine the issues and trajectories due to the situation in Bukit Goh scheme. A better management plan for the future of Bukit Goh scheme is needed to be constructed by FELDA to ensure the sustainability of this rural settlement scheme.

BRIGHT, SAW JOHN, Center for Social Development Studies

Rights and Rites: Community Water Resource Governance on the Salween River in Karen State, Burma

The Salween River flows through China, Myanmar and Thailand, and is an invaluable resource to the millions of ethnic people who live along it. The Hatgyi Dam is one of five controversial hydropower dams planned to be built in Myanmar territory that would affect the livelihoods and cultural values of local communities. To date, there have also been questions of community involvement in decision-making regarding the Salween dam projects, and therefore there is an issue of justice in the water governance of the Salween River. Focusing on the Hatgyi Dam as a case study, this paper uses the concepts of "Rights" and "Rites" as analytical tools to examine community expectations and the decision-making process over the Salween dams to date. According to this framework, a "Rights-based approach" is a formalized and

legalistic approach to water governance normally recognized by the state. Meanwhile, a “Rites-based approach” is a locally-defined natural resource management approach that centers around cultural norms and local knowledge.

The purpose of this paper is to evaluate how both approaches - “Rights and Rites” - could work together to help ensure inclusive decision-making and to ensure a full consideration of justice with regards to the Salween River. The paper claims that the issue of justice is not yet fully considered in the current development policy agenda in water governance in Myanmar. Furthermore, the paper claims that decision-making over the Salween dams has been highly centralized and without community participation. The paper suggests that there is an opportunity to recognize both the “Rights” and “Rites” approaches to water governance in Myanmar, and this could result in a positive step towards inclusive decision-making and ensuring justice in water governance on the Salween River.

CHAROENRATANA, SAYAMOL, *Human Security and Equity Research Unit, Social Research Institute Chulalongkorn University, Thailand*

Remote Farmers in The Changing World: How To Building Sustainable Food Systems?

For whom” and “of what” are the main challenges of sustainability science. Without justice, sustainability is questionable. While social justice focuses on how to distribute resources and burden among humans in a fair and equitable matter, environmental justice explores more balance relationship between human and nature. By merging social and environmental justice concepts could result in a better understanding of what sustainable food system entail. Both rural farmers on the supply side and urban consumers on the demand side are interconnected within the food system. Hence, their fairness relationship is defined with social justice value. Meanwhile, in food production processes, farmers’ usage of natural resources reflects proportional environmental justice. It is undeniable that consumers are responsible for current environmental situation and farmers’ wellbeing too. Unbalanced power between consumers and farmers causes social disparities and a deterioration in ecosystem functionality. Therefore, to create sustainable food systems is contingent on restoring a balanced relationship between producers and consumers. While empowered food producers can handle the problem or pressure well, conscious consumers can have more access to healthy food. In our study, however, we found that farmers are faced with land accessibility issues and lack of planting choices. Moreover, many rural villages in Thailand are experiencing these problems. These ratify inequality of land usage and monopolized production resources in Thailand. Hence, structural interventions at various levels are required, to re-distribute land/water resources usage more fairly, to improve productivity practically, to achieve de-monopolized free market and to raise environmental awareness of both farmers and consumers. We would like to explore, whether reestablishing social justice between food producers and food consumers could provide more environmental justice, and how sustainable food system are re-defined based on justice concepts.

CHINNIYOMPANICH, ASCHARA, *Macquarie Law School, Macquarie University, Australia*

Thailand’s Community Rights Act for the Karen Ethnic Minority in Protected Areas

According to the lawyer Surapong Kongchantuek, ‘The Kaeng Krachan case was the most severe dispute between an ethnic minority group and the Thai authorities in Thailand’s history’. He was referring to the case of Uncle Ko-i Meemi, the 105-year-old spiritual leader of the Karen villagers in the Kaeng Krachan National Park and his clan, whose homes on their ancestral lands were burned by park rangers in May 2011. Even though the National Human Right Commission found that the officials had violated their community rights, the Central Administrative Court ruled in their favor and found that they had not violated the villagers’ rights, since the Karen had illegally entered the protected forestland; therefore, the park officers had the legal right to force them to leave. This case, which illustrates many disputes between ethnic groups and officers in Thailand, is just a drop in the ocean. The conflicts that occur are never-ending, since both groups claim different

rights; the ethnic groups claim human rights and the authorities claim legal rights. Although both types of rights are valid, only legal rights as written in the law can be enforced; hence, the written law needs to be revised in order to escalate the rights of these ethnic groups. The aim of this study is to research and develop a new Community Rights Act as a tool to bridge the gap between reality and the constitutional provisions of the 2017 Constitution of Thailand.

Drawn from the constitutional provisions, the proposed Community Rights Act will be of benefit to strengthen the enforcement of the protection of community rights, especially the land rights for the Karen in environmentally-protected areas in Thailand. Their cultural and environmental rights, including traditional knowledge of agriculture, will be addressed in the Act to ensure the rural sustainability of their communities.

This legal research project will incorporate an approach that is comparative to that of Australia and Liberia to answer the research question of ‘How should the Community Rights Act promote the rural sustainability, sustainable environment, and community rights of the Karen in protected areas in Thailand?’ The lessons learned, laws and policy regulations of these countries will shed light on the shaping of a Community Rights Acts for Thailand to ensure rural sustainability and the protection of the environmental and cultural community rights of ethnic groups in protected areas as a guardian of the environment.

DANG, TO KIEN, CENDI/SPERI, Viet Nam

Food Security in Vietnam Requires ‘Right Livelihood Sovereignty’ of Indigenous Peoples

Securing indigenous land rights by the recognition of customary law has been the mission of SPERI for decades with very encouraging results. This includes seeds saving for biodiversity and the preservation and further development of traditional medicine. The next step is finding appropriate social entrepreneurship models for indigenous communities in Vietnam.

Customary Law Based Community Forest Land and Livelihood Sovereignty of Highland Indigenous Ethnic Minorities

For indigenous ethnic communities, land and forest are the vital cultural and livelihood spaces. The spiritual land and forests of indigenous ethnic communities play an essential role in shaping, nurturing and maintaining cultural identity and cultural values, and thus stabilizing their daily livelihoods. These functions, however, have not yet been fully recognized in Vietnam Law until the recent advocacy efforts; and still the continuously lacking by indigenous ethnic minorities of suitable spaces for them to practice their culture and livelihoods in Vietnam is one of the key causes of the erosion of indigenous minorities’ customary laws associated with strong community structure and social relationships.

Over the past 20 years, the Livelihood Sovereignty (LISO) Alliance composed of the leading local organizations included TEW-CHESH-CIRD-SPERI-CIRUM-CODE-CENDI have been dedicated to reclaiming rights to livelihoods for indigenous ethnic communities in Vietnam and Laos. This paper describes in detail the methodology and results of how we were implemented/approached address local solutions amongst local stakeholders; and have recently been successful in advocating concretely the 16 Articles in the recent approved Forestry Law 2017 dated 15 November 2017 which covers 10 key issues directly concerning indigenous ethnic communities of their spiritual forest/land. Achievements and lessons learned would not be possible without the long-dedicated academic supports as well as like-minded funders.

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Innovating Farm-to-Market Road Design in Upland Production Areas of the Philippines for Rural Sustainability and Socio-Economic Transformation

Rural access improvements promote rural sustainability and socio-economic transformation. Yet it remains a major challenge in the Philippines given its varied geographic terrain and more than 7,000 islands. The Philippine government has been devoting yearly budgetary allocation for the construction of farm-to-market roads to improve rural access. Estimated budget per kilometer for farm-to-market road is pegged at 10 to 12 Million in Philippine peso.

To further maximize the limited budget for this kind of project, a modified single lane Portland cement concrete pavement (PCCP) for farm-to-market road was designed suited for low-traffic, geographically-isolated and traversing steep terrain upland production areas in the Philippines. It was designed to accommodate traditional animal-drawn transport modes, habal-habal and modern vehicular design used by farmers in rural, mountainous agriculture production communities. It consisted two parallel lane PCCP portion having at least 1 m width each with earth carriageway at the center as pathway for animal carriers.

This innovation in road design engineering considered the welfare of animal-drawn vehicles still prevalent in rural Philippines as a sustainable component in greening the agri-food system. Among its noted advantage and benefits include: 1) lengthens the concreted portion of a road segment by at least 200% using the same budget of a typical 2-lane PCCP farm-to-market road project, 2) use of lesser amounts of construction materials per unit length, 3) rapid construction period, 4) contribute in stabilizing carriageway for 2-lane roads in future construction and 5) usable for any type of traditional and modern vehicular transportation.

ESTRELLA, ARTHUR B., Central Bicol State University of Agriculture

Lake Buhi: Where has all the Water Gone? Institutional Sustainability Mechanisms for Water Security and Environmental Integrity

Lake Buhi with its mystery and serenity is an environmental icon in the Province of Camarines Sur, Philippines. It is home to the endangered smallest commercial fish in the world, Sinarapan (*Mistichthys luzonensis*), and the vanishing Aetas. Equally important, Lake Buhi feeds a multitude of river tributaries that provides water for irrigation, water for hydropower, water for fishing and water for ecotourism. Lake Buhi is no less a bio-economic lifeline. With such importance however, the connection between the household and farming/fishing practices in its peripheral communities, the lake ecosystem and the watershed are not well understood.

Using rural socio-ecological assessment and participatory resource appraisal, this project determined the household and farming/fishing practices of the upland and lakeside communities and their impact on Lake Buhi's ecology and on its ecosystem services and functions. Key findings showed a direct link with the lake's peripheral communities' economic and domestic practices to the lake's poor water quality and watershed degradation. Among the practices that led to the current condition are: (1) intensive monocropping along the littoral regions of the lake and mid-hilly areas near the lake, (2) swidden farming and monocropping in the upland areas, (3) increased urbanization in shorelines and inflow of sewerage and domestic wastes to the lake, and (4) overstocking and crowding of fish cages in the lakes. These results indicate that Lake Buhi is now in the stage of progressive eutrophication.

Amidst the declining ecological status of the lake and the watershed, findings also reveal the absence of a coherent lake and watershed management strategy. Local consultations indicate that sustaining the multiple services of the lake and the

watershed require institutional innovation. A management framework needs to be in place to have a local common platform for a sustainable watershed and lake management.

Watershed management systems have to sustain the ecological quality of the lake and its watershed to ensure water security. Knowing such, a local policy direction and institutional mechanisms were drawn to sustainably manage the lake and its watershed for water security and environmental integrity.

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The Importance of Farmer Perception Towards Ecological, Social Economy and Ethical Urgency as Component of Sustainable Horticulture Practices

The application of sustainable horticulture as an innovation in Yogyakarta Province Indonesia has not yet been adopted successfully. Previous research has revealed that understanding farmers' perceptions of an innovation is important to provide appropriate interventions to encourage changes in farmer behavior. Surveys were conducted in 2016 with 257 male and 93 female who were members of farmers groups from 21 villages in Sleman, Bantul and Kulonprogo Regency, Yogyakarta Province, Indonesia. The objective of the survey was to determine the effects of farmer internal factors on the perception of ecological, social economy and ethical (ESE) urgency as a component of sustainable horticulture practices. Results showed that the internal factors motivation had more significant direct effects on the farmers' perceptions about ESE urgency. Income had a significant effect on ecological and ethical urgency and formal education had a significant effect on ethical urgency. This implied the importance of extension education in achieving horticultural sustainability must be based on the motivation of farmers and considerate of the basic needs of farmers.

FUKUGAWA, NOBUYA, Tohoku University, Japan

AMBASH, MASAHIITO, Tohoku University, Japan

SUHUD, YUANITA, ERIA, Indonesia

Division of Labor Among Innovation Intermediaries in Agricultural Innovation Systems: A Case of Indonesia

Agriculture is an important industrial sector in many developing countries, that makes agricultural innovation a matter of critical importance to nations. Recent agricultural innovation studies show it is important to view the process of knowledge creation and dissemination in agriculture as a system comprising various economic agents. In such a system of innovation, innovation intermediaries are individuals and organizations that help others improve productivity through enhancing connectivity among economic agents. As a consultant, innovation intermediaries provide clients with solutions to technological problems in research and development. As a broker, they foster market transactions among clients. As a mediator, they foster non-market-based, mutually beneficial collaborations among clients. As a resource provider, they secure clients in collaboration, access to financial, technological, and physical resources to achieve a collaborative outcome. Intermediation function is particularly important for economic agents, such as small holders, who tend to lack social capital and absorptive capacity, which is required to identify a relevant source of knowledge, develop ties to potential partners, and exploit the linkage for their innovative activities.

Recent studies on innovation intermediaries show that different types of innovation intermediaries help economic agents improve productivity via different routes, which suggests division of labor among intermediaries. Indonesia, is a major

agricultural power in ASEAN and in the respect the paper seeks a way to understand division of labor among innovation intermediaries in an agricultural innovation system. Specifically, we illustrate (1) the whole picture of the agricultural innovation system in Indonesia by identifying relevant innovation system constituencies (local farmers, extension workers, researchers at universities and public research institutes, cooperative associations, multinational enterprises, non-government organizations, self-help groups, voluntary groups, etc.) and interactions they are involved in, (2) what type of knowledge (new variety of plants, pest and disease control, cultivation methods, agricultural machinery, civil engineering, etc.) that has been intensively created by public research institutes and universities, (3) how different organizations (public/private, central/local, and policy-led/voluntary) help new technologies to be diffused among local farmers via different routes (organizing workshops for education and training, technical consultation, establishing and diffusing standards, licensing patents, etc.), (4) how much public research institutes and universities are responsive to local research needs, and what kind of feedback mechanism is working behind it, (5) whether and how the way division of labor is organized varies across agricultural products (rice, cassava, sugar cane, etc.), reflecting the product-level variations in market size, appropriation conditions, and technological opportunities, and (6) what can be learned from the case of Indonesia and what are its peculiarities regarding knowledge creation and dissemination in the agricultural sector.

GUILLONNET, RENAUD, GRET, Laos

VAGNERON, ISABELLE, CIRAD, Laos

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Representations of Good and Safe Food for Consumers in Myanmar and Vietnam and Market Opportunities for Safe and Environmentally-Friendly Agricultural Products

Globally food consumption patterns are changing as a result of increasing incomes, and growing health and environmental issues. This is also true in the Greater Mekong Subregion (GMS), where agricultural intensification has resulted in land degradation, biodiversity depletion and greater farmer vulnerability. Indeed, a rapid and uncontrolled shift from traditional farming systems (mainly aimed at family consumption and local exchanges) to commercial agriculture went together with an unbridled and unsustainable use of chemicals. Unsurprisingly, consumer concerns about the quality and the safety of the food they eat have been growing in the GMS since the mid-2000s. Analyses conducted on the fresh vegetables sold in various markets of the GMS show a significant proportion of samples containing pesticide residues, sometimes above accepted safety levels. Moreover, all countries of the GMS have been exposed to various food scandals related to the excessive use (and to the misuse) of pesticides, sometimes resulting in casualties. As a result, organic and safe agriculture initiatives are spreading in all GMS countries, although at different paces. In each country, organic and safe vegetable initiatives are developed through specific mechanisms (e.g., private brands, certifications, short value chains), and with the involvement of different stakeholders from both the public and the private sector –Ministry of Agriculture, NGOs, supermarkets, specialty stores, consumer associations, social enterprises, etc.

This paper builds upon a study carried out in Myanmar and Vietnam in 2017 on the knowledge, perceptions and behavior of consumers regarding organic and safe food products. We show that in Myanmar and in Vietnam, consumers called for more clarity and control over their food, in a changing food system driven by sprawling urbanization and amid increasing food scandals and food borne diseases. While traditions remained robust in terms of buying (wet markets remained very popular) and cooking practices, social media played an increasing role as alert systems, opinion makers and sources of information. Consumers in both countries were very concerned by the presence of chemicals (e.g., fertilizers, pesticides, preservatives, dyes, formaldehyde) in the food they ate, for which they blamed both farmers and market intermediaries. In this situation, consumers increasingly turned to supermarkets and to specialized shops, especially in Vietnam where the niche for safe food is doing very well. Social media are also increasingly used to set up buyer groups connecting informed consumers to trustworthy farmers through short supply chains. Overall, consumers ask for greater transparency, traceability and compliance with international safety standards. They looked to the governments to provide them the assurance that the food they ate was safe.

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SANTOSO, UMAR, Universitas Gadjah Mada (UGM)-Indonesia
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YOURAVONG, WIROTE, Prince of Songkla University (PSU)-Thailand
BHAT, RAJEEV, Universiti Sains Malaysia (USM) – Malaysia
GARDJITO, MURDIJATI, Universitas Gadjah Mada (UGM)-Indonesia

Health Food Tradition of Asia: A Case Study from HFTA Project

Biodiversity plays an important role on the sustainable productivity of soils and provides the genetic resources for all crops, thus biodiversity directly influences food security. Food security is threatened by biodiversity loss because the production and availability of food depend on plant, animal and other organisms. Biodiversity and health are linked at many levels. Nutritional composition between foods affecting micronutrient availability in the diet. Healthy local diets with adequate levels of nutrients intake, requires maintenance of high biodiversity.

Southeast Asia has high biodiversity that provides the foundation for human health and is vital for food security. Conserving biodiversity and sustainability is critical for our well-being and to end hunger as well as malnutrition. Ironically, Southeast Asia has the second highest prevalence and total number of children who are stunted, wasted, and underweight. Prevalence of non-communicable diseases is also growing rapidly. To address the problems and challenges of food diversification, food security, malnutrition and health problems, HEALTH FOOD TRADITION OF ASIA (HFTA) PROJECT has been conducted. The project was sponsored by ProSPER.Net UNU-IAS, and four Universities in Asian countries involved in this project, i.e Universitas Gadjah Mada (UGM)-Indonesia, Prince of Songkla University (PSU)-Thailand, Universiti Sains Malaysia (USM), and Asian Institute of Technology (AIT)-Thailand.

The objectives of this project were to undertake documentation and assessment of selected traditional foods including local food/drink which are believed to have health promoting functions. The documentation of health food tradition of Asia will give information and knowledge about health benefit of traditional foods in Asia. The documentation of each selected foods was obtained by survey method as primary data source. Surveys on the selected popular cooked foods, beverages/drinks, raw food, and neglected foods were conducted by interviewing the owner of catering services, food producers, and sellers. Information of the foods such as description, history and legend, ingredients, taste, quality, special properties were obtained according to local understanding of each food which were collected from interviewing using standardized HFTA form. A total of 43 items of traditional foods from Indonesia, Thailand, Malaysia, and Nepal have been assessed and documented. The project identified the name of traditional food items, main ingredients, method of preparation, functional properties, and health benefits. In the future it is important to do interdisciplinary research on nutrition, health, and foods technology, social and economic aspects involving all stakeholders.

KHAM, SAI SAM, Metta Development Foundation, Myanmar

Organic/Agro-Ecological Farming in Myanmar: Opportunities, Constraints and some Selected Case Studies

Farming in Myanmar, as practice by most small holder subsistent farmers, is still relatively chemical free. However, literature related to agro-ecological farming or organic farming in Myanmar is rare and difficult to find. In August 2017, Metta Development Foundation, a partner of Towards Organic Asia, and a further 5 local NGOs conducted an assessment. The purpose of this assessment was to obtain a better understanding about the organic/ agro-ecological farming situation in

Myanmar, its opportunities and constraints, so that partner NGOs who are promoting sustainable agriculture in Myanmar could better strategize in their ground works and their advocacy. Emphasis is given to small holder farmer's experience rather than the agribusinesses. Crop and geographical area reflect where these NGO partners operate and interact with. This is not a comprehensive study and therefore not representing the perspective of the whole country or stakeholders. Rather it gives a picture of different areas and diverse actors and their interventions. It's a small first step, a foundation on which further enquiries should be built on and dig deeper. In addition to the case studies, the study explores the organic/ agro-ecological farming into five areas 1. How it defines and labels itself, 2. What is the situation of the small-scale producers, 3. What is going on with the value chain and markets, 4. What are the consumers' expectation and experience, 5. Policies: are they enabling or discouraging.

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Emerging Export-Oriented Horticulture and Intensification of Cropping Systems in Myanmar

In recent years, improved land connectivity between Myanmar and Yunnan Province of China has linked Myanmar's Central Dry Zone with the vast demand for horticulture produce in China, notably watermelon and musk melon. Integration with the Chinese market has stimulated a transformation of agricultural production in this impoverished region from extensive cultivation of low value non-perishable crops such as cereals to intensive cultivation of high value fruits.

The direction of intensification has been largely influenced by a specific demand for agricultural produce in China. The market favors large-sized fruits, high quality products less concern about chemical residues that are used in the production of these commodities. Such market preferences to meet consumer demand encourages intensive use of agro-chemicals. Farmers have fallen into the vicious cycle of heavy use of chemical fertilizer and pesticide in order to reduce the risk of crop failure as well as achieving higher returns. Furthermore, high profits from watermelon and musk melon cultivation has provided impetus to and the emergence of a vibrant land rental market between land holders and growers which was not present in the past. While intensive use of agro-chemicals is not compatible with repeated cultivation, the land rental market enables growers to continue intensive cultivation in different fields. Enlightening horticulture growers as to the proper use of agro-chemical is urgently required in the Central Dry Zone of Myanmar.

JAMAGO, JOY MEMBREVE, Central Mindanao University, Philippines

Greening Agri-Students through Creative Pedagogies

Should the world fail to achieve global food and nutrition security, perhaps making humans gain the ability to photosynthesize is the ultimate solution. This preposterous statement almost always jolts my students. Greening agri-students or anyone does not have to be this way. However, "greening" their minds is an opportunity. There are many food production technologies available. Details of each is available in the internet but students do not know many of these technologies. The internet is like a "global university" but Facebook (FB) is offered for free by mobile communication providers. Hence in rural communities, most people use the internet to access their social media accounts, the most prolific of which is FB. Academic institutions commit to social transformation through education, however it can only happen when we achieve mental and emotional engagements of students i.e. when they apply the concepts, principles and ideas we profess; use their new-found skills and enhanced capabilities; and become more refined as individuals because of better values. Five non-conventional teaching strategies in various classes of millennials were used. Classes are for dynamic interactions and not for instructional monologues. One approach is pictorial documentation of their meals for a week to two weeks to determine crop diversity in their diets and sharing these on FB with hashtags like #BeASmartFoodie and #FoodCropDiversity. This had influenced individuals in their FB circles including some family members. Showing short videos often excite students. Although, asking after for their thoughts either in oral or written form does not always warrant a similar response. Forcing millennials to (seriously) think, analyze, digest and share is perceived either as inspiring or an

inconvenience. Making concept videos as a requirement to be shown in a “film festival” by the end of term some amazing results were produced. Panel discussion is also very dynamic. Students become braver and more comfortable to share ideas in this approach which indirectly affirms them and what they know. Also, former students, friends and peers who visit campus are asked to do some quick class sharing on their life and work. This proved to strongly impact and inspire many students, and indirectly promoted links among them. Holding public class exhibits per semester for Project: KS (Knowledge Sharing) for a week to a month creates quite a stir. Imbedded in this activity is food product development using neglected, underutilized or unconventional plant species. The most recent is the “AGGIE Talks” which is a modification of TED Talks. Students share pre-approved topics or their own stories. It seems to both scare and excite them, which is a good sign of mental and emotional engagement. It is an academic responsibility to constantly try new approaches and sustain what proves to work. “Greening agri-students” is a practical investment to greening the agri-food systems. When they believe in green agriculture, they will find ways to make things happen.

NGUYEN, PHUONG LE, Vietnam National University of Agriculture, Viet Nam

NGUYEN, MAU DUNG, Vietnam National University of Agriculture

Peri-Urban Agriculture Development in Hanoi City: Food Security, Food Safety and Gender Dimensions

Urbanization that has been happening in Vietnam at a large scale and rapid rate for the past two decades strongly impacting on the livelihoods of people that are farmer-based. The peri-urban residents have been facing food insecurity, particularly those who are not able to seek new jobs and construct new livelihood strategies. Additionally, a number of better-off local people continue to farm to ensure food safety.

Together with investigation of contribution to food security and food safety, this research analyzed gender dimensions in peri-urban agriculture development in Trau Quy town, Hanoi city. In doing research, primary data was collected through observations and interviews from 39 women and 21 men whose families have been practicing peri-urban agriculture in the town of Trau Quy. Interviews of key informants were carried out with government officials, local agricultural extension workers and other stakeholders who are concerned with the practice of peri-urban agriculture in the suburbs of Hanoi city. Purposive sampling procedures were chosen to select residents who practice peri-urban farming and stakeholders for interviews. Both quantitative and qualitative methods are applied in data analysis.

The research showed that peri-urban women devoted more time to agriculture than their male counterparts. Women have been managing subsistence, semi-subsistence and commercial crop farms while men focused merely on commercial animal keeping. As a result, women mainly made decisions on crop production such as the types of crops to be grown, time of harvesting the crops, how to take care of crop, time and price of selling products, whereas men mostly dominated in animal keeping from purchasing, breeding to fattening and selling products. Total agricultural revenue of male managed farm were twice as high as female ones headed farms. However, most female headed households could serve families with rice and vegetables while male ones could meet 12.8 percent of egg and 17 percent of fish for family consumption.

In efforts to serve food security and safety, farmers have significantly contributed to conservation of agriculture and to avoidance of land abandonment in peri-urban areas. Moreover, as peri-urban farmers grow vegetables and keep animals targeting self-consumption for ensuring their health, they mostly apply organic farming rather than chemical practices. Based on the research findings, the policy recommendations have been drawn including relevant technology supporting, market information providing and agricultural infrastructure improvement.

LEWIS, DANIEL RAY, Chulalongkorn University, Thailand

Coops and Contract Farming: Institutional Incentive Structures that Work, and Those that Don't

If small farmers are to survive and prosper in the era of agri-business, there needs to be a solution to the parts of the farming system that require economies of scale. Although small farms may have advantages such as the care and attention required for organic crops or for attention to detail, nevertheless as with any business they need to outsource functions they cannot do well. Economies of scale are often required for Marketing, Financing, Purchasing and Logistics. Coops and Contract farming provide ways of solving these problems.

The cooperative may take on the marketing, acquisition, logistic and financing functions for a group of member farmers to the mutual benefit of all. However, this leads to problems such as “free rider, horizon, portfolio, control, and influence cost problems” (Ortmann & King, 2006)

Likewise, the parent company in contract farming may take on the same roles of marketing, acquisitions, logistics and financing, (in addition to risk reduction) but may at the same time exert power over farmers in terms of unfair prices, unreasonable demands, unreliability, and unfair treatment between farmers.

Over time, incentive structures have been designed to help control these problems. Marketing requires consistent quality and farmers need incentives to provide only high-quality produce. Financing requires that loans be paid back on time requiring social or private pressure. Logistics requires crops be harvested over time in ways that are not always fair. This research considers the incentive structures created to solve these problems and identifies common problems and solutions. In the end the success of both types of outsourcing depends on trust and fair procedures.

JIUMPANYARACH, WARIPAS, Chulalongkorn University, Thailand

Exploring the Motivation of Smallholder Farmers to Shift to More Sustainable Agricultural Production Systems in Thailand

This study was undertaken to examine the economic, society, and attitudes impacts on smallholder farmers who have changed agricultural practice to become more sustainable. These farmers transferred from conventional farming practice to organic based farming practices. An survey comprising of in-depth interviews with smallholder farmers from different regions of Thailand (north, south, east, central, and northeast) was conducted with the average farm size ranging from 5-10 rai (0.80-1.60 hectares). A sub-sample of 10 farmers were interviewed in each region resulting in a total of 50 interviewed farmers. The survey questions comprised both qualitative (socioeconomic, attitudes, farm characteristics) and quantitative (scale satisfaction from extension, practices, and marketing) with two broad agriculture production systems dominating, namely mono-cropping and integrated farming systems.

Most integrated farming systems had adopted organic agriculture practices while mono-cropping systems were predominantly utilized conventional farming practices. Farmers' attitudes were different between these two farming systems with conventional farmers focused primarily on profit maximization and supported industrial agriculture. Organic farmers in contrast were concerned on health, social community engagement, environment, and sustainability. Health issues were an important driver for farmers to convert to organic farming practices. Economic, cultural, and society impacts attitudes on safety or organic farming practices. Higher prices associated with certified organic standard products was seen as an incentive for farmers move to organic farming system.

The study found that relatively few smallholder farmers could access national and international organic standards (Organic Thailand, IFOAM). Local and community organic standard, for example participatory guarantee system (PGS), would help smallholder farmers access national organic markets. Government policy including agricultural organic practice and marketing should support farmers to become sustainable.

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DEWULF, ART, Wageningen University, Netherlands

WARNER, JEROEN, Wageningen University, Netherlands

AHMED, FARHANA, Wageningen University, Netherlands

LONG, HOANG, Can Tho University, Vietnam

VAN PHAM DANG TRI, Can Tho University, Vietnam

Reconciling Equity and Resilience of Food Systems in Major River Deltas of South East Asia

River deltas represent one of the most resource rich and environmentally dynamic ecosystems on earth. They provide a diverse range of ecosystem services, ranging from fertile soil and natural resources such as water for irrigation which is central for agricultural production. However, they are also under the threat of increasing human impacts in the form of urbanization, reduction of natural areas and the effects of climate change. The increase risk of extreme flood events, droughts and their catastrophic socio-economic consequences is now a reality that affects many parts of the world.

In South-East Asia, deltas are essential for producing food for growing numbers of people. Strengthening food resilience therefore represents a high-level policy priority for many countries in South-East Asia. Historically, food resilience in deltas has been strongly tied to institutional and infrastructural interventions to manage flood risk (such as building of embankments and drainage structures). In the case of the Mekong Delta of Vietnam (VMD) for example, major increases in rice production are largely attributed to engineering resilience largely through major irrigation projects and increasingly improved flood protection dikes. However, the equity dimensions of these interventions often tend to be overlooked. As a result, there is a risk that interventions to increase food resilience in deltas, strengthen the resilience of certain social groups (e.g. wealthier farmer groups at the expense of the resilience of small-holders).

Despite initiatives that focus on flood defenses, a flood can be so powerful that it can continue to damage crops, especially rice cultivations and fruits and hence compromise poor peoples' livelihoods and the food supply chains which they rely upon. We are therefore interested to understand, if the system as a whole has achieved some level of resilience (partly due to the flood defense mechanisms in place), does infrastructure have a differential effect on people's mobility under flood conditions? And are some groups experiencing less rather than more food security, as water accumulates in some places but not others? This paper will present preliminary findings on the relationship between food equity and resilience in deltaic regions through reference to two case studies. The first case is in the Ganges-Brahmaputra-Meghna delta (Bangladesh) and the second case study in the Mekong delta (Vietnam). The research design is based on fieldwork activities in the Tangail district in Bangladesh and in the An Giang Province of Vietnam. The fieldwork activities have a strong emphasis on qualitative enquiry methods, including participatory rural appraisal, institutional and actor mapping, social surveys and literature review.

LAMA, LAXMI, SupAgro, France

DE HAAN, STEF, CIAT, Vietnam

RANERI, JESSICA, Bioversity, Italy

Understanding Agrobiodiversity in Urban Market: A Comparative Study of Crop Species and Varietal Diversity in Traditional Wet Market and Supermarkets in Cau Giay District, Hanoi, Viet Nam

Importance of agrobiodiversity in the market is recognized for its contribution on dietary diversity in both rural and urban space and ultimately to the on-farm diversity. Agrobiodiversity assessments have typically focused on rural spaces and little is known about its composition and presence in urban outlets. With an aim for comprehensive understanding of agrobiodiversity situation in urban market in the context of rapid food system transformation in Vietnam, we conducted agrobiodiversity assessment comparing species and varietal diversity of vegetables, fruits, condiments, (pseudo) cereals, legumes and roots and tubers in traditional wet markets and supermarkets in Cau Giay, urban district of Hanoi.

71 vendors in 4 wet market and 4 supermarkets were surveyed with semi structured questionnaire. Descriptive statistics were used for comparison of crop species richness and crop varietal diversity. The species and varieties were further examined to identify the neglected and underutilized species (NUS) and subsequently applied basic value chain assessment for 2 NUS species: “foxtail millet” and “weedy amaranth”. 54 respondents consisting value chain actors and consumers were interviewed using semi structured questionnaire.

High number of species and varietal diversity as well as wide number of NUS species were found both in wet market and supermarkets but distinguishing contrasts were found for the unique species. Unique species in wet markets consisted of species and varieties of local food habit where as exotic species imported from distant location (international) were unique to supermarket. This was due to the supermarket’s capability to direct sourcing. The unique species to each type of market suggested the important complementary role of both the market in bringing the dietary diversity and agrobiodiversity. Vendors’ independence on decision making over the choice of species and varieties and the sources in wet market was found to be attributing to the presence of wild/uncultivated species unlike in supermarket. In the present trend of increasing supermarkets, the study suggests a need to support the existence of wet market for the local agrobiodiversity. The main finding of NUS value chain assessment is the observed economic value of the NUS species by the producers for income and the nutritional value of the NUS species from traditional knowledge by the consumers were the main driving force for the presence of NUS crops in the urban market. Farmers were found to be ignoring the other value of the NUS species (drought resistant, low investment etc.). Consumption is limited among nutrition conscious and vegetarian consumers. The study suggests the need for interventions at the consumer level by expanding the demand for NUS species to wider consumer to ensure on-farm diversity and providing dietary diversity with traditional species to the urban consumers.

Overall, the study points out the importance of agrobiodiversity assessment in markets in different space and temporal course that can allow tracking of food system transformation at agrobiodiversity level.

MAHAT, PARLADH, Chulalongkorn University, Thailand

Drivers and Constraints of Conversion to Organic Farming in the Kingdom of Bhutan

Organic farming is today practiced in almost every country in the world and is becoming increasingly popular due to growing awareness and consumers concerns as a result of the use of synthetic agro chemicals (SAC’s) in modern agriculture. Organic farming is ‘environmentally friendly’ practice which aims at increasing the agricultural productivity, household income for the small-scale farmers in developing countries to enable them to come out of poverty and provide better

quality food. This study is critical for designing better strategies as the countries around the world strives to convert to alternative agriculture approach such as organic farming. The objective is to explore the status of organic farming in the country and investigate the drivers and constraints in conversion to organic farming by the farmers of Gasa district in Bhutan. Survey data of 146 respondents were collected during the month of October, 2017. These data were used to determine the drivers and constraints in conversion to organic farming. The primary data were analyzed using SPSS. Analysis also includes the use of descriptive statistics and the study recognize the drivers and constraints factors in conversion to organic farming according to the ranked order of importance by the farmers. The variables included in the questionnaire were measured using five point Liker Scale to measure the responses of the questionnaires. The respondents were also asked to prioritize the factors, drivers and constraints for conversion to organic farming. The result suggested that the soil fertility, health and environmental conservation are the predominant drivers for conversion, while the social perspectives such as better education and employment opportunities are of lesser importance. Constraints experienced by the farmers during the conversion related to productivity (ineffective weeds, pests and disease control), labor intensive, marketing issues, and ineffective transportation facilities. To promote organic farming, the Bhutanese government must overcome the economic challenges and problems, and weeds, pests and disease controls. Some of the strategies recommended includes capacity building, market development and market information, farm mechanization, policy support, agriculture credit and crop insurance and the formation of more groups and cooperatives.

MANOROM, KANOKWAN, Ubon Ratchathani University, Thailand

Gender and the Mekong River: Inclusions and Exclusions

Over more than the last decade, a disappearance of river based-livelihoods due to hydropower development in the Mekong River has frequently increased poverty in rural communities. While, gender as a theme has been put in place in large hydropower project assessment and mitigation programs, poverty has persisted for rural poor women, men and ethnic groups who have significantly depended on river resources. Implementation of mitigation and compensation programs at many hydropower dams have failed to make up for the losses that have been experienced by females and males. While men are perceived to hold better access to resources than women, it is not necessarily the case that men are more sustainable villagers than women. Hence, embodied emotional geographies of places, peoples and resources are fundamentally grounded through resource struggles and resource conflicts. Women's subjectivity including embodied, transversal, stresses, experience, sense and affect are excluded in hydropower management and assessment despite of the fact that these female subjectivities are believed to be transformed into political subjectivity. Thus, the paper argues that gender in the Mekong basin is in some ways recognized, but under some conditions is also missed depending on patriarchal culture and unawareness of diversity among females and males, as well as missing disaggregated data on gender issues in hydropower development and poverty reduction.

MIDDLETON, CARL, Chulalongkorn University, Thailand

THABCHUMPON, NARUEMON, Chulalongkorn University, Thailand

LIAN, VAN BAWI, Chulalongkorn University, Thailand

Water Insecurity in Hakha Town, Chin State, Myanmar: Structural Violence and the Production of Water Scarcity

In recent years, the population of Hakha Town, Chin State has faced growing water insecurity. This paper examines the underlying factors that have produced water insecurity. Our research involved two rounds of in-depth interviews and focus groups in Hahha town in May 2015 and June 2016 with state, civil society, and community representatives. We situate our research within the fields of political ecology and peace studies, with a focus on water security.

With a growing population, demand for water is rising. However, water insecurity due to population growth is not the complete picture. Hakha's water sources have also become less productive due to watershed degradation and deforestation. This has resulted from road construction, agriculture expansion, house construction, and the establishment of two military bases on top of the Rung Mountain. As the town expanded into the watershed, there has been little watershed and urban planning.

At present, Hakha town does not have a municipal water supply. In its absence, the population manage water through a combination of community water groups and small-scale private activities. Whilst broadly meeting basic needs, new migrant arrivals to the town in particular have struggled to access water. The upcoming commissioning of the Timit Dam will certainly help alleviate water shortages, but many questions remain towards the price of water and how it will be allocated.

We argue that the circumstances that precipitate water insecurity in Hakha town have in part emerged from deeper forms of structural violence. Thus, addressing water insecurity should not only be engaged at the level of technical planning, or even water governance, but also from a viewpoint of ensuring justice. We suggest that the transition to a quasi-civilian government, and sub-national governance reform, offers new opportunities for urban and watershed planning to address water insecurity.

PAIBOONSITTIKUN NARUMON, Towards Organic Asia (TOA) network

BHUKHONKHA, KITTIKHUN, Towards Organic Asia (TOA) network

A Growing TOA Young Organic Farmers' (YOF) Movement in the Mekong Region. Join Us!

Since the first YOF was organized at PADETC in conjunction with the AEPF (Asia Europe People's Forum) in Laos, 2012, gatherings were organized in Vietnam, Thailand, Myanmar, Cambodia and Bhutan. The YOF farmers launched a manifesto "Occupy Yourself" and they encourage each other to take up (organic) farming against the trend of urban migration of young people. Kittikhun Bhuhonkha (Big) won support of ALiSEA to make a series of films about young organic farmers in the Mekong region and he will show two sequels. The 7th YOF will be held in Mae Tah community near Chiang Mai, Thailand in 2018.

PATRICIO, JOSE HERMIS P., Central Mindanao University, Philippines

Estimating Non-CO₂ Greenhouse Gas Emissions from Field Burning of Crop Residues in the Philippines: 1990-2015

Open burning of crop residues is widespread in the Philippines where about 32% of its land area is devoted for agriculture. Such practice may undermine food and health security in the long term as it generates significant amounts of air pollutants including non-CO₂ greenhouse gases (GHG) and their precursors such as CH₄, CO, N₂O and NO_x from burning of biomass residues from rice, corn and sugarcane. While the Philippines contributes only a small fraction (0.27%) of the global GHG emissions, it is but imperative to undertake an updated inventory of emissions of these radiative gases as such data and information would serve as basis in prioritizing research, policy and development directions for greening such agri-food systems. Using IPCC methodology and simple geographic information system, the study indicated an average annual total emissions of 21 Gg, 550 Gg, 0.4 Gg and 15 Gg, respectively for CH₄, CO, N₂O and NO_x from 1990 to 2015 with CO constituting 94% of the emissions. About 1/3 of the total emissions originate from Western Visayas region. Other "hotspot" regions include Central Luzon, Northern Mindanao and Cagayan Valley.

Higher projections of non-CO₂ greenhouse gas emissions are expected in the future if current unsustainable biomass burning is left unabated. It is therefore imperative that local and international research networking and collaboration need to be

established to develop, deploy, diffuse and transfer sustainable technologies that harness potential uses of crop biomass residues. This is on top of pursuing aggressive education and communication campaigns targeting farming communities to heighten their awareness on the negative environmental and health impacts associated with open burning crop residues.

PRAVALPRUKSKUL, PIN, Stockholm Environment Institute

Beyond Food: The Future of Home Gardens in Thailand

In Thailand, home gardens have persisted as important parts of local farming livelihoods for several centuries. Rapid economic and environmental changes in the past few decades, however, have altered long-standing home gardening traditions in Thailand. While studies indicate the contribution of home gardens to household food security, genetic diversity and women's empowerment, what is less understood is whether and how home gardens retain these roles and contributions in the context of rapid economic and environmental change. This initiative used a citizen science approach to understand, from home gardener perspectives, the roles and contributions of home gardens to households. The study focused on Nonthaburi province, a peri-urban area with a rich agricultural history that was severely affected by the 2011 floods. Results suggest that key challenges in ensuring the continuation of the home gardens were diminishing household labour and a disinterested younger generation. It also found that pride and identity as Nonthaburi producers, rather than financial and material benefits, sustained current home gardens. The home gardeners were involved in several stages of the research process: defining the research agenda, collecting data, and verifying the results. Through this project, we aimed to better understand the dynamics and potential application of citizen science approach in framing, developing and conducting research in a way that it remains useful to the citizens.

RIGG, JONATHAN, National University of Singapore, Singapore

The Past, Present and Future of the Smallholder in Asia

Drawing on research from across Asia, but particularly focusing on Thailand, this keynote will set out the conditions and characteristics of smallholder farming and livelihoods, and suggest reasons for the puzzling persistence of the smallholder during periods of deep and rapid socio-economic and structural transformation. The paper will also address what this means for the future of the smallholder as a social unit and smallholder farming as an economic activity, bearing in mind the ageing of farmers and concerns expressed about declining farm productivity respectively. Finally the paper will comment on what this means for policy, the actions of governments, and the prescriptions of multi-lateral agencies.

RUIZ DE GARIBAY, DANIEL, World Rural Forum

Rejuvenating Agriculture: Keeping Young Farmers in The Field

Based on the working methodology of the World Rural Forum, a plural network of farmers associations, research centres and agricultural cooperatives, this paper addresses the need to promote the inclusion, integration, incorporation, social, legal and economic recognition of young people within the agricultural sector. From the perspective that youth should be at the centre of the processes that define policies that affect them, this paper lays out a methodology for addressing the major challenges faced by young farmers. After a brief description of the context at world level where major challenges affecting youth in agriculture are explained. The paper presents and discusses several successful case studies where factors hindering access to farming and political participation have been addressed. Further the paper presents policy recommendations. The aim of the paper is both to provide policy inputs for public policies that promote inclusion of youth farmers in the agricultural sector but also to be an exercise of inclusion by generating an opportunity for young farmers to take part on the policy-making cycle.

RUNGMANEE, SOIMART, Thammasat University, Thailand

Intimate Water Exclusion: Processes and Politics of River Enclosure by Fish Cage Aquaculture in Northeast Thailand

The paper examines the processes and politics by which rivers have become partially enclosed by the expansion of fish cage aquaculture in Ban Hat Kuan in the Lower Songkhram river basin in Northeast Thailand. The paper is based on mixed method fieldwork conducted over 12 months between 2015 and 2016, including household surveys, in-depth interviews, focus group discussion, and participant observation. The paper points out that fish cage aquaculture is providing opportunities and advantages for an exclusive group of villagers who have money to invest. Rapid expansion of fish cage farming decreases access to this public resource and also pollutes and degrades the river and its natural resources from chemical feed meal and medicine used in aquaculture. Villagers who depend on wild capture fisheries from the river are increasingly excluded as the fish cage owners want to secure their cages from outsiders. Some villagers who still fish in the river have skin problems.

In the context of Northeast Thailand, this paper reveals the processes of how social intimates exclude one another from access to the public river as part of a strategy to accumulate wealth via fish cage aquaculture. It also provides analytical tools to understand the dynamic rural landscapes associated with aquaculture production, where households are embedded in a combination of farm and non-farm jobs and highlights the situation of Thai rural households who are highly differentiated in terms of their access to productive resources and other opportunities.

SAM, VITOU, CEDAC, Cambodia

From Subsistence Rice Farmers to Becoming Farm Entrepreneurs and Key Actors in Local Development in Cambodia

Cambodia is an agrarian society with more than 70 per cent of its 15 million population engaged in agriculture. According to the 2013 national census, there were around 2.3 million farm families, with around 1.8 million of them primarily engaged in rice production. Family farmers, especially rice farmers with small landholdings of 1 to 2 ha, are facing several challenges in this new context, and they are struggling to survive with very limited government support. In order to support those farmers CEDAC has focused on 8 strategies as follows: 1) To work with rice farmers to enable them to increase their rice productivity significantly by promoting the system of rice intensification, known as SRI. SRI is an agroecological approach which focuses on improving practices for managing rice plants for a better yield; 2) support farmers in producing premium-quality organic rice for the market; 3) support rice farmers in their developing rice mill cooperatives (RMC) which can produce and retain more value-added for their farmer-members; 4) support rice farmers in building market-resilience and climate-resilience by assisting them in developing their rainfed rice fields into multi-purpose farms (MPFs) based on the principles of system intensification and diversification (SID); 5) facilitate farmers to open stores and market outlets that enable SID farmers to sell their products to the market directly; 6) support rice farmers to develop village-based saving groups for mutual self-help, and to integrate saving, SRI/SID, and marketing activities under the umbrella of community-based farmer organizations for local self-management. These local institutions help to consolidate and expand the improvements made by the first five strategies; 7) training of rural youth to be future leaders of diversified, market-oriented, organic-farming systems which are economically sound and efficient; and 8) building a network of networks of farmer groups that can promote the development of sustainable family farms and will enhance the role of family farms within Cambodia society

SISOUVANH, CHANTHALANGSY, Rural Development Agency (RDA), Laos

Impact of Rural-Urban Youth Migration on Entrepreneurship and Local Economy in Laos and Rural Organic Garden Promotion.

Rural-urban migration has been of great academic interest over the years with most studies focusing on pull factors towards cities and the impact of this phenomenon on the rural areas in terms of social and economic situations. In Lao PDR, rural-urban migration of especially young people, both males and females, is common, and on the increase and this certainly has both positive and negative impacts on entrepreneurship and local economies in the rural areas. This paper investigates the impact of rural-urban youth migration on entrepreneurship and local economy in Laos. The objective is to cite the impacts of rural-urban youth migration on entrepreneurship and economies of the rural areas. However, to emphasize rural economic development in Laos without promoting awareness on self-sustaining agriculture would increase poverty among rural community. Therefore, this paper aims to share how community development agency promoting rural organic home gardens in Laos. The results show that rural-urban migration leads to the improvement of living standards as well as creating both positive and negative impacts in both urban and rural areas. Hence improving both push and pull factors in rural and urban areas will be important.

SJÖSTRÖM, CHERYL, Lund University, Sweden

Investigating the Translating of Science

This paper addresses an identified problem whereby knowledge production is currently not being fully mobilized from its place of creation, that is, within universities, to where it is intended to end up, that is, having an impact on society. The paper investigates research conducted within agricultural universities in sub-Saharan Africa regarding smallholder food production with the intention of contributing to the normative goal of smallholder food security. More often than not, the pathway from university know-how to the end user of smallholder farmers includes various intermediaries of policy-makers and practitioners before reaching target groups of farmers and farmer groups. The question is, how is this flow of science really working? What limits and facilitates academic institutions and how can such 'translation' institutions be structured in a way that enables science and scientists to best participate in the conversation about smallholder food security?

SRETTHACHAU, CHAINARONG, Mahasarakham University, Thailand

Bio-diversity and Food Security Impacts Assessment of Krabi Coal Power Plant Project

Coal power plant projects not only causes air pollution and health impacts, but also effects to ecosystem and food security of local community. This article applied the "Thai Baan Research" or Villagers' Research methodology as well as concept of traditional ecological knowledge in analyzing food impacts of Krabi Coal Power Plant Project, which the Thai Government planned to build on the Andaman coast, Krabi Province. The study conducted in 8 communities located in the wetlands ecosystem in close proximity to the power plant site, coal pier and route of ship for coal transportation during 2014-2016. The finding of this study are as follows;

The Andaman seashore in the area will be affected by Krabi Coal Power Plant, Coal Pier, and route of ships for coal transportation that is a fertile wetland ecosystem in this region. The study founded 193 fish species, 63 shellfish, 5 squid species, 18 crab species, 22 shrimp species, 2 horseshoe crab species, 2 jellyfish species, and seaweed which villager consume in daily life. If the project and vessel projects are built, it is possible to cause the decline of above aquatic life and cause the food security of local communities.

Secondly, sea fishing products in the affected area not only make food security for local communities close to the projects, but also the inland community which come to fishing in the affected area. Moreover, the food security impacts will occur in the region which food community chains are link and between eastern and western parts or Southern. In conclusion, Thai Baan Research methodology and traditional ecological knowledge are useful to examine bio-diversity and food security impacts of large scale project.

SPISIAKOVA, MARTINA, Asia-Pacific Association of Agricultural Research Institutions (APAARI)

Capacity Development for Agricultural Innovation – Bringing System-Wide Change in Asia-Pacific through Building Soft Skills in Higher Education

Innovation in agriculture is critical for feeding the world's growing population in the face of a changing climate and degrading natural resources. It is fundamental to achieving the Sustainable Development Goals (SDGs). Innovation for agricultural development has been dominated by the view that relevant knowledge is generated by research and passed on to the extension system for adoption by farmers through a linear process of technology transfer.

However, this approach has largely failed to tackle contemporary complexity of agricultural development. Such complexities are embedded in the interaction of socio-economic and environmental factors, including global markets, urbanization, agricultural commercialization and intensification, climate change, food safety standards, and many other factors. Addressing these complexities requires agricultural innovation to be based on multi-stakeholder interaction, including the private sector and civil society – non-governmental organizations (NGOs) and farmer organizations, as well as functional capacities (soft skills) to improve the processes that accelerate innovation. For countries to fully exploit their innovation potential, they must strengthen the capacity of individuals and organizations and create an enabling environment to make Agricultural Innovation Systems (AIS) more effective.

The Asia-Pacific Association of Agricultural Research Institutions (APAARI) is working with the Food and Agriculture Organization of the United Nations (FAO), Agrinatura and other partners, to promote the adoption of the Common Framework on Capacity Development for Agricultural Innovation Systems (CD for AIS) developed under the Tropical Agriculture Platform (TAP) and funded by the European Union. A series of webinars specifically targeting the higher education sector are being developed to raise awareness of the importance of developing functional capacities to unlock the potential for agricultural innovation, and the role of higher education in developing the respective capacities. This paper discusses APAARI's work with partners on CD for AIS.

TASHI, SONAM, Royal University of Bhutan, Bhutan

Bhutan to Convert to a Fully Organic Country – Challenges and Way Forward

The principles of organic agriculture (OA) and the philosophies of the development goals of the Royal Government of Bhutan (RGoB) based on Gross National Happiness paradigm share many commonalities, including the emphasis on long-term sustainability. Further, cognizant of the multiple ill effects of conventional agriculture and taking stock of its own limited resources and critical role of agriculture in supporting the country's economy, the Government formally launched OA in 2003 and in 2008 boldly declared to become a fully organic country by 2020. Yet, the progress towards that goal, is rather slow. There are many challenges, chief among these being (i) mindset of both technocrats and bureaucrats, who perceive OA as backward and converting to OA would contract productivity and disease incidences would be rampant, (ii) limited manpower or trained personnel – OA is knowledge intensive and needs holistic understanding of all components of the farm, (iii) limited effective alternatives/technologies to plant protection needs, and (iv) limited research and funding for OA. As a way forward, Bhutan has to collaborate with credible organic

agriculture institutions and organic promoters and besides documenting the benefits of OA experienced in other countries, set up research and demonstration plots both in research and farmers' fields to address the misconception that OA is low-yielding, unprofitable and disease/pest is the norm in organically-farmed fields. The way forward should also include research on generating effective and easy-to-prepare and use alternatives to plant protection requirements. In addition to the prevailing strong political will and support and long-term vision, pragmatic inclusive strategies to implement the organic policy should be drafted in consultation with all stakeholders, including farmers and academia

THOL, DINA, Ministry of Land Management, Cambodia

Communal Land Title Registration: Cambodian Government Effort to Secure Indigenous People Land

Cambodia is reported to have been home to around 24 groups of indigenous people mainly live in the northeastern provinces of the country. The history of communal land titling (CLT) project may be traced as far back as 2001 since the promulgation of the Land Law. The CLT has drawn attraction from development agencies and partners to work together for the benefit of indigenous communities in Cambodia. In cooperation with the government's ministries, they came up with the pilot project in Ratanakiri and Mondulakiri in the early 2010s, which resulted in the issuance of CLTs to two communities in Ratanakiri and a few CLTs in Mondulakiri in 2011. To date there are 22 communities that have obtained CLTs from the Ministry of Land Management, Urban Planning and Construction. This paper presents the effort of the Cambodian government to CLTs from the perspective of the practitioners who have involved with the work of CLTs both at national and ground level.

TRAKANSUPHAKON, PRASERT, PASD, Chiang Mai, Thailand

Ecology Knowledge and Practice in Special Space of Cultural Zone for Cultural and Community Rights in Karen Community in Northern Thailand

"Live with water, care of river, live with trees, care of forest." The paper considers how a traditional knowledge system based on the poetic way of connecting people with plants, animals, stone and spirits can give rise to a genuine sustainable model for relating to the natural environment among Karen population, their world view that enables management of natural resources in the long term for future generation.

Such a holist perspective is recognized in the implementation of a (Special Cultural Zone) which is part of policy program to support the recovering of Karen people's livelihood. What is notably interesting in that kind of stimulating experiences is how the indigenous wisdom is associated with the most up to date knowledge and technologies (GPS) in ecology and sustainable agriculture.

The main goal of "Special Space of Cultural Zone" is a mechanism for enhance, support the Karen people for the recognition their cultural rights, land and ancestor territory based on the framework of Cabinet Resolution August 3, 2010 and hopefully will recognize officially law in long term process.

The short definition of special space of cultural zone, space of maintain and recovering traditional livelihood based on traditional knowledge and practice integrate with appropriate scientific knowledge by consistent with the local current context. The livelihoods imply self-reliance based on knowledge and practice and mainstream the way how to use and take care of natural resource in sustainable way and practically support the sustainable development goals (SDG) in the grassroots level.

The emphasized activities and process of space of special cultural zone there are at least include to strengthen leaders and community organization, enhance intergeneration transmission of indigenous knowledge and practice, traditional knowledge based on geography information system (GIS) or community based information monitoring system (CBIMS). And the official declaration of the community on Special Cultural Zone by witness of relevant government agencies, stakeholders, civil society and people's networking for identify the community will free, actively and practically be recovering their cultural rights based on their livelihoods in the Special Space of Cultural Zone.

VAN WILLENSWAARD, HANS, Towards Organic Asia (TOA) network

Socioeconomic Transformation in South East Asia Driven by Conversion to Sustainable Agriculture: Initiative for an ASEAN+Global "Earth Trusteeship Platform"

In addition to the well-established scientific consensus regarding climate change, Judge C.G. Weeramantry (1926 – 2017), Sri Lanka, explored consensus among world religions on Earth Trusteeship. The core of this consensus, which carries weight as customary international law, is: "Humanity is in a position of trusteeship of the environment and not in a position of dominance" (Weeramantry, 2009, 2014). Judge Weeramantry, as Deputy President of the International Court of Justice in The Hague, excelled in the understanding of global development policy dynamics. Above all, his insights were inspired by the values inherent in local sustainable agriculture practices and traditional natural resources management in Sri Lanka. These values intrinsic in sustainable agriculture practices resonate with the evident common ground on trusteeship of natural resources across the diversity of formal religious doctrines, indigenous beliefs and secular environmental ethics. The notion of Earth Trusteeship can provide the much needed foundation for an emerging socio-economic paradigm for the 21st century, and transformation towards genuine sustainability of (local and global) economic systems, in particular in ASEAN. Along these lines Prof. Klaus Bosselmann, New Zealand, author of a number of books on international environmental law delivered a groundbreaking speech at the Interactive Dialogue of the UN General Assembly, 21 April 2017, titled The Next Step: Earth (T)rusteeship.

As South East Asia is rich in religious denominations as well as of indigenous cultures – while searching for a new contemporary common identity – ASEAN can provide a platform for inter-cultural exchanges in tandem with further scientific sustainability research, as well as reflection on and co-creation of (international) law and governance, on the issue of land tenure and related new forms of ownership.

The further development of Earth Trusteeship may require a dialogue on national sovereignty equal to the inconclusive debates around Human Security and the "responsibility to protect" (R2P) which prompted then Secretary-General of ASEAN Dr. Surin Pitsuwan to declare: "In fact, it (the Human Security concept and R2P) is making the state sovereignty more meaningful because state security, state sovereignty, also would involve responsibility." In addition to environment and agriculture related SDGs scattered all over the Agenda 2030 and in need of a logic framework, an Earth Trusteeship Platform could in particular address SDG 16 'Peace, Justice and strong institutions' and SDG 17 'Global partnerships for the SDGs'. The 70 years Universal Declaration of Human Rights celebrations in December 2018 offer a unique opportunity to reflect on the advancement of related "Earth Rights" and to prompt a related innovative research and development platform.

VAN WILLENSWAARD, WALLAPA, Towards Organic Asia (TOA) network

Consumer – Producer Collaboration and Social Enterprise Training for Food System Leadership

The TOA working group of Marketing and Consumer Education organizes an annual networking event towards food literacy and socio-economic transformation. Wallapa, from her experience with the Thai Green Market Network, initiated this international exchange platform under the title MINDFUL MARKETS ASIA FORUM and started in tandem the annual Mindful

Markets social enterprise (SE) course. Can we outscale Community Supported Agriculture (CSA) initiatives towards (larger scale) consumer – producer cooperatives like Hansalim in Korea and Saikatsu Cooperatives Club in Japan, both with thousands of active members? What capacities can we develop together towards sustainable food system leadership? Last year the Forum invited Prof. Wen Tiejun, China, on rural reconstruction in Asia and we expect a dynamic group of social entrepreneurs from all over Asia again in September 2018.

SAM, VITOU, CEDAC, Cambodia

From Subsistence Rice Farmers to Becoming Farm Entrepreneurs and Key Actors in Local Development in Cambodia

Cambodia is an agrarian society with more than 70 per cent of its 15 million population engaged in agriculture. According to the 2013 national census, there were around 2.3 million farm families, with around 1.8 million of them primarily engaged in rice production. Family farmers, especially rice farmers with small landholdings of 1 to 2 ha, are facing several challenges in this new context, and they are struggling to survive with very limited government support. In order to support those farmers CEDAC has focused on 8 strategies as follows: 1) To work with rice farmers to enable them to increase their rice productivity significantly by promoting the system of rice intensification, known as SRI. SRI is as an agroecological approach which focuses on improving practices for managing rice plants for a better yield; 2) support farmers in producing premium-quality organic rice for the market; 3) support rice farmers in their developing rice mill cooperatives (RMC) which can produce and retain more value-added for their farmer-members; 4) support rice farmers in building market-resilience and climate- resilience by assisting them in developing their rainfed rice fields into multi-purpose farms (MPFs) based on the principles of system intensification and diversification (SID); 5) facilitate farmers to open stores and market outlets that enable SID farmers to sell their products to the market directly; 6) support rice farmers to develop village-based saving groups for mutual self-help, and to integrate saving, SRI/SID, and marketing activities under the umbrella of community-based farmer organizations for local self-management. These local institutions help to consolidate and expand the improvements made by the first five strategies: 7) training of rural youth to be future leaders of diversified, market-oriented, organic-farming systems which are economically sound and efficient; and 8) building a network of networks of farmer groups that can promote the development of sustainable family farms and will enhance the role of family farms within Cambodia society

YANGYUEN, KAEDTISAK, Alternative Agriculture Network (ANN), Thailand

Comparing Wellbeing Between Organic and Chemical Farmers: Why Social Engagement Leads to More Happiness and Better Economic Benefits

The Action Research on comparative organic and non-organic smallholder farmer: case study Tambon Kammad, Kudchum District, Yasothorn Province. This initiative is based on the objectives of Towards Organic Asia (TOA) programme with The Sustainable Agriculture Foundation (Thailand) and Alternative Agriculture Network (AAN) which is nationwide partnerships. Under cooperating to developing research problem in farm households and community level, the research applied literature review, in-depth interview 3 case studies of organic farming, and also 3 case studies of Conventional farming. Furthermore, questionnaires survey on 14 organic farming household and 14 conventional farming household which total 28 household had launched during 1 June – 30 October 2015. In addition, the research concept rely on well-being concepts which categories into 9 domains as following; 1) Economy/income/livelihood, 2) Health, 3) Ecology/biodiversity/environment, 4) knowledge/education, 5) Governance/politics/justice, 6) Time-use, 7) Culture/spirituality/friendship, 8) Self-evaluation, 9) Community vitality. These concepts were used to compare the research findings.

The research found that, comparative income between organic farmers and conventional farmers, the organic farmers had

high income than conventional farmers in all farm activities including, paddy rice production, livestock, and hired workers. Interestingly, organic farmers have income almost one fold than conventional farmers per years per rai and household 7,617 baht comparing with 4,231 baht. In terms of hire, organic farmers also have high wage than conventional farmers. This was explained by the case study those organic farming households can support their children to high education, these children can get high income because they work as skilled labour or off-farm sector.

Finding from in-depth interview, 3 cases of conventional farmer, the research found that in part of the concept and paradigm of farm household, some farmers know in some part of organic farming, mostly lack of knowledge and farm experiences. Some farmer try to convert to organic farming but still stuck with some obstacles such as economic conditions, debt, and lack of skills. For 3 cases of organic farmer, they have motivated to avoid risk of economic instability; moreover, they always keep learning that shape their perspectives and lives by related with value, safe, environment dependency, and also production related to mode of culture. Some of these attitudes can elevate to right of farmer and fair-trade movement. Some of specified farmer can critique on government policies, some take part to mobilize in policy and power negotiation.

General Information

Registration Information

Registration

The registration desk is located on the 7th Floor of Chaloem Rajakumari Building of Chulalongkorn University (address: Soi Chula 12, Phayathai Road, Pathumwan, Bangkok, 10330 Thailand). On-site registration starts on Tuesday, 23 January 2018 at 8:30.

The opening hours of the registration desk are as follows:

Tuesday, 23 January 2018	08.30 – 16.00
Wednesday, 24 January 2018	08.30 – 16.00
Thursday, 25 January 2018	08.30 – 13.30

Name Badge

Each delegate will receive a name badge upon registration. For security reasons, all participants are required to wear their name badge during all activities related to the Social and Sustainability Science International Conference. Admission to sessions, the exhibition and official functions will not be granted without the relevant name badge.

Opening Ceremony and Reception

The opening ceremony will take place on Tuesday 23, January 2018 from 9.00 to 10.45 in the auditorium (room 801) located on 8th Floor in the Chaloem Rajakumari Building. A live stream of the ceremony and the first plenary policy dialogue session will be broadcast via Facebook Live. The reception dinner hosted by the Program Committee and APAARI will be held from 17:00 onwards on the 20th Floor. Cocktail food and drinks will be served. There will be live music as well as short talks during the dinner.

Venue Information

Venue

The Social and Sustainability Science in ASEAN International Conference 2018 take place in Chaloem Rajakumari Building of Chulalongkorn University. The registration, plenary policy dialogues sessions, parallel sessions and side event take place in the same place.

Information desks

Volunteer staff members will be there to assist you during the conference. You can easily recognize them by their matching name badge. Please feel free to ask them for help.

Internet access

Wi-Fi access is available in all rooms throughout the entire venue. The Wi-Fi network is called “eduroam”.

Message boards

The message boards facilitate contact between the participants, and they keep you up-to-date about messages from the organizer.

Technical information for presenters

All session rooms are equipped with a computer, Wi-Fi, a projector and a screen. Speakers are requested to bring their own USB device so that they can easily upload their presentations onto a single computer. This should be done during the break preceding the session at the latest in order to save time between the presentations. Speakers will operate the slides themselves. If speakers want to use their own computer, they need to bring a suitable VGA connector. We recommend using either PowerPoint or Adobe PDF presentation files saved on a USB device that is compatible with Microsoft Windows 7. The expected format of the presentation file is Microsoft Windows PowerPoint (version 2013 or previous versions).

Local Information

About Bangkok

Bangkok is Thailand’s capital and its largest city. The city is host to many international organizations including UNESCO and its Asia and Pacific Regional Bureau for Education. In 2017, Bangkok was announced to be the second most visited city in the world after Hong Kong according to the Euromonitor’s International Report. The city is known for ornate shrines and vibrant street life. Chao Phraya River, which is full of boats, feeds its network of canals, flowing past the Rattanakosin royal district, home to opulent Grand Palace and sacred Temples. Various incredible street food vendors are on the list of the first Michelin Guide Bangkok since 2017.

Calling for help

Fire service: 199, Police: 191, Ambulance and Rescue: 1554

For hearing-impaired persons: text message to 086 000 5055

Electricity

Thailand electricity is 220 volts. There is unfortunately no specific standard for plugs and outlets. The most common plug type is the two flat pronged North American type but round prongs are also seen. Note that few buildings have grounded outlets for three-pronged cords.

Currency exchange

Regular shops and restaurants generally accept Thai Baht only. Banks are normally open on weekdays from 9:00 to 16:00.

Credit cards

VISA, MasterCard, Diners Club and American Express credit cards are widely accepted at hotels, shops, restaurants and nightclubs.

Shopping

Try to avoid travelling around the city during rush hours (mornings from 07:30 - 09:00 and in the afternoons from 17:00 - 18:30). Markets are good to visit in the mornings or evenings when it's a little cooler and often less frantic. In the heat of the day, air-conditioned malls is a much better place to be. Simply venturing aimlessly into the city, hoping to find what you are looking for by chance, is not advisable.

Tipping

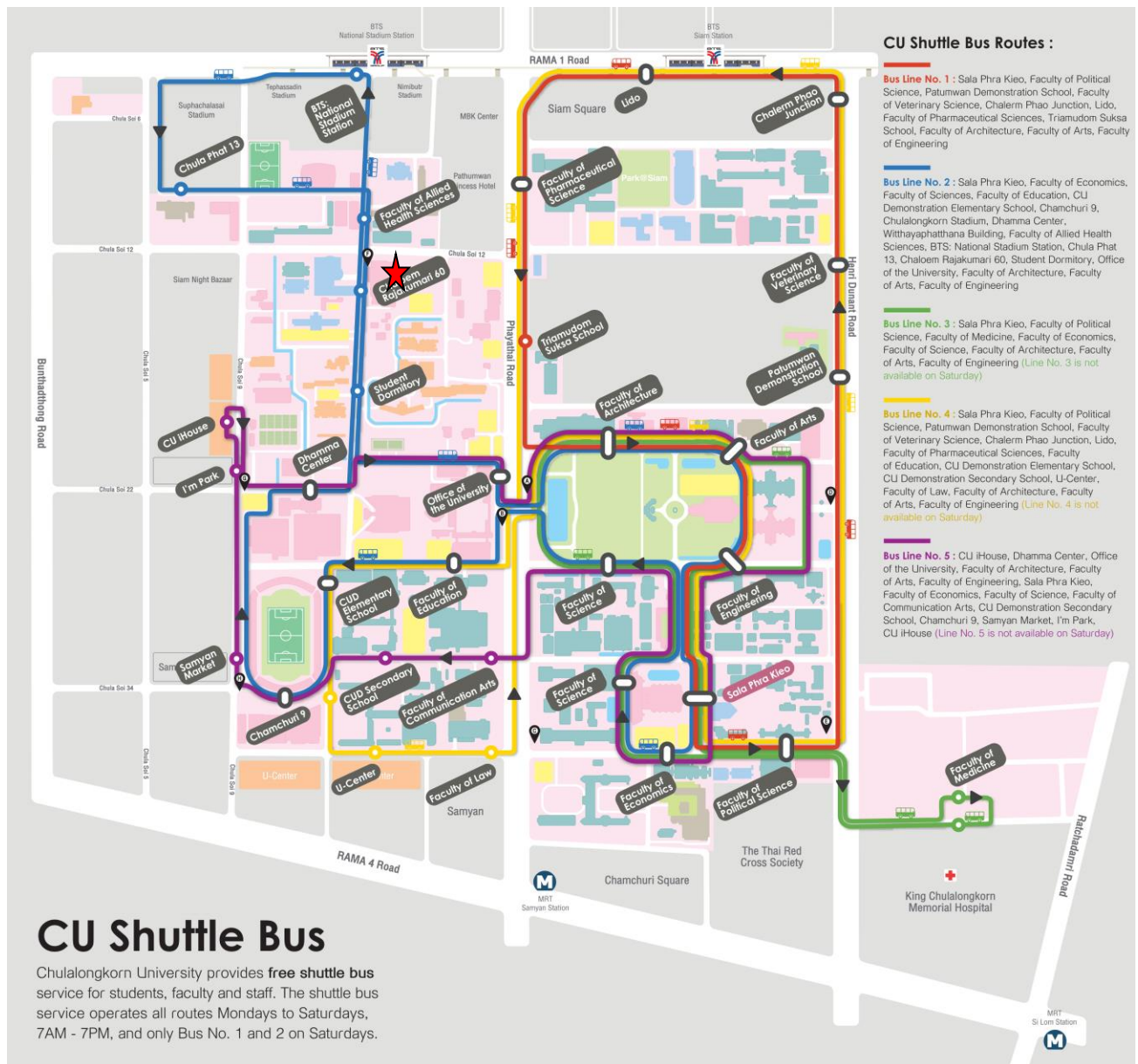
Tipping in hotels is not expected, but is always appreciated, for instance 20 – 50 Baht. In all restaurants it is customary to leave behind any loose change in coins as a tip.

Public transport

The Skytrain (BTS) and underground (MRT) rail systems connect the main shopping, entertainment and business areas of the city, while river taxis and express boats can be used to explore many historic sites and attractions at the riverside. The Skytrain station closest to conference venue located at Chaloemraj Kumari Building is called “Siam”, while the underground station closest to Chulalongkorn University is called “Samyan”. Taxis are cheap and appear on virtually every corner at almost any time. Tuk-tuks are still worth a ride at least once.

Map & CU shuttle bus

CU Shuttle Bus, Chulalongkorn University provides free shuttle bus service for students, faculty and staff. The shuttle bus service operates all routes Monday to Saturdays, 7AM – 7PM, but only routes No.1 and 2 on Saturdays.



CU Shuttle Bus Routes:

Bus Line No. 1: Sala Phra Kieo, Faculty of Political Science, Patumwan Demonstration School, Faculty of Veterinary Science, Chalem Phao Junction, Lido, Faculty of Pharmaceutical Sciences, Triamudom Suksa School, Faculty of Architecture, Faculty of Arts, Faculty of Engineering

Bus Line No. 2: Sala Phra Kieo, Faculty of Economics, Faculty of Sciences, Faculty of Education, CU Demonstration Elementary School, Chamchuri 9, Chulalongkorn Stadium, Dhamma Center, Witthayaphatthana Building, Faculty of Allied Health Sciences, BTS: National Stadium Station, Chula Phat 13, Chaloem Rajakumari 60, Student Dormitory, Office of the University, Faculty of Architecture, Faculty of Arts, Faculty of Engineering

Bus Line No. 3: Sala Phra Kieo, Faculty of Political Science, Faculty of Medicine, Faculty of Economics, Faculty of Science, Faculty of Architecture, Faculty of Arts, Faculty of Engineering (Line No.3 is not available on Saturday)

Bus Line No. 4: Sala Phra Kieo, Faculty of Political Science, Patumwan Demonstration School, Faculty of Veterinary Science, Chalem Phao Junction, Lido, Faculty of Pharmaceutical Sciences, Faculty of Education, CU Demonstration Elementary School, CU Demonstration Secondary School, U-Center, Faculty of Law, Faculty of Architecture, Faculty of Arts, Faculty of Engineering (Line No.4 is not available on Saturday)

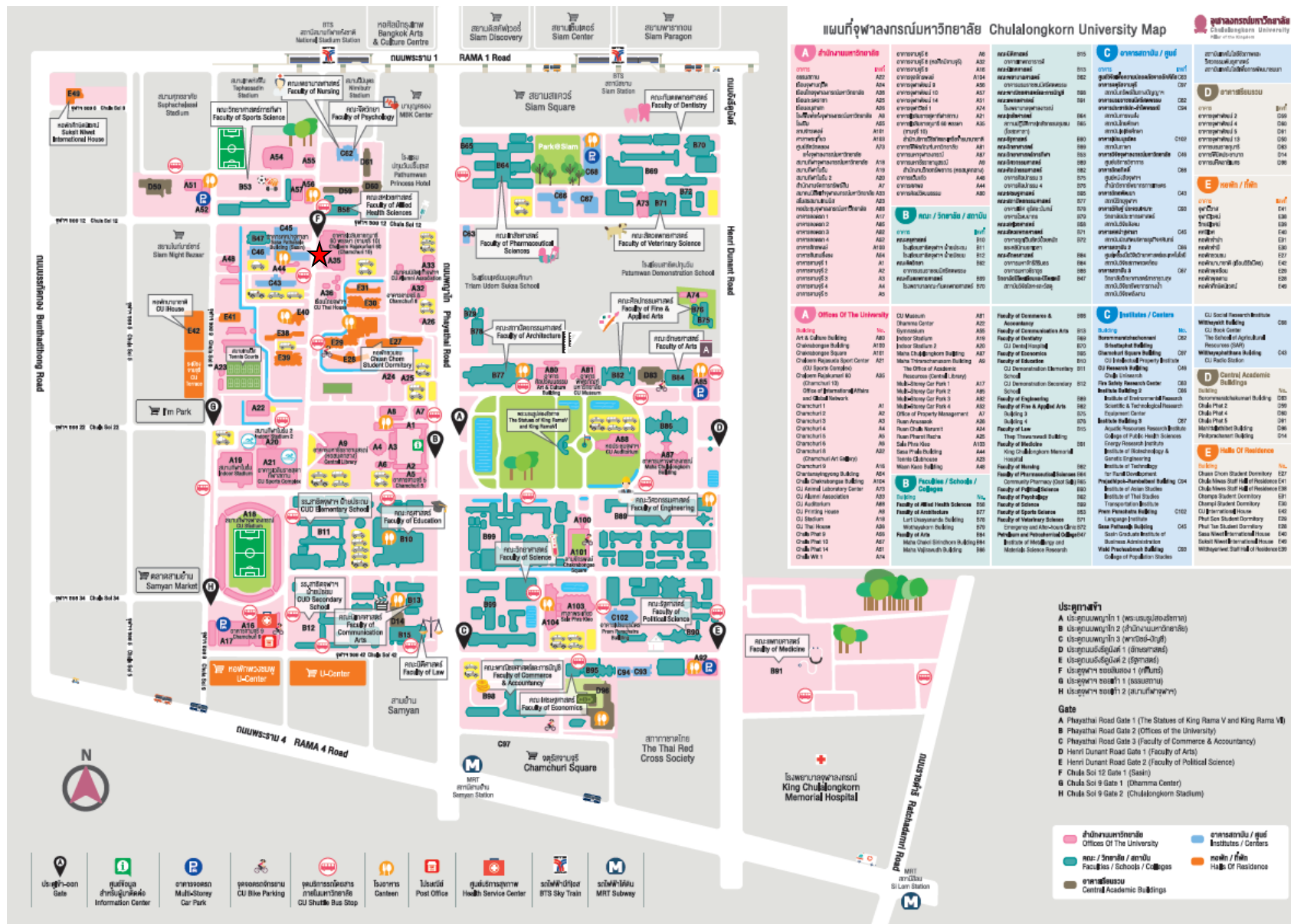
Bus Line No. 5: CU iHouse, Dhamma Center, Office of the University, Faculty of Architecture, Faculty of Arts, Faculty of Engineering, Sala Phra Kieo, Faculty of Economics, Faculty of Science, Faculty of Communication Arts, CU Demonstration Secondary School, Chamchuri 9, Samyan Market, I'm Park, CU iHouse (Line No.5 is not available on Saturday)

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CUPopbus (Mobile Application)

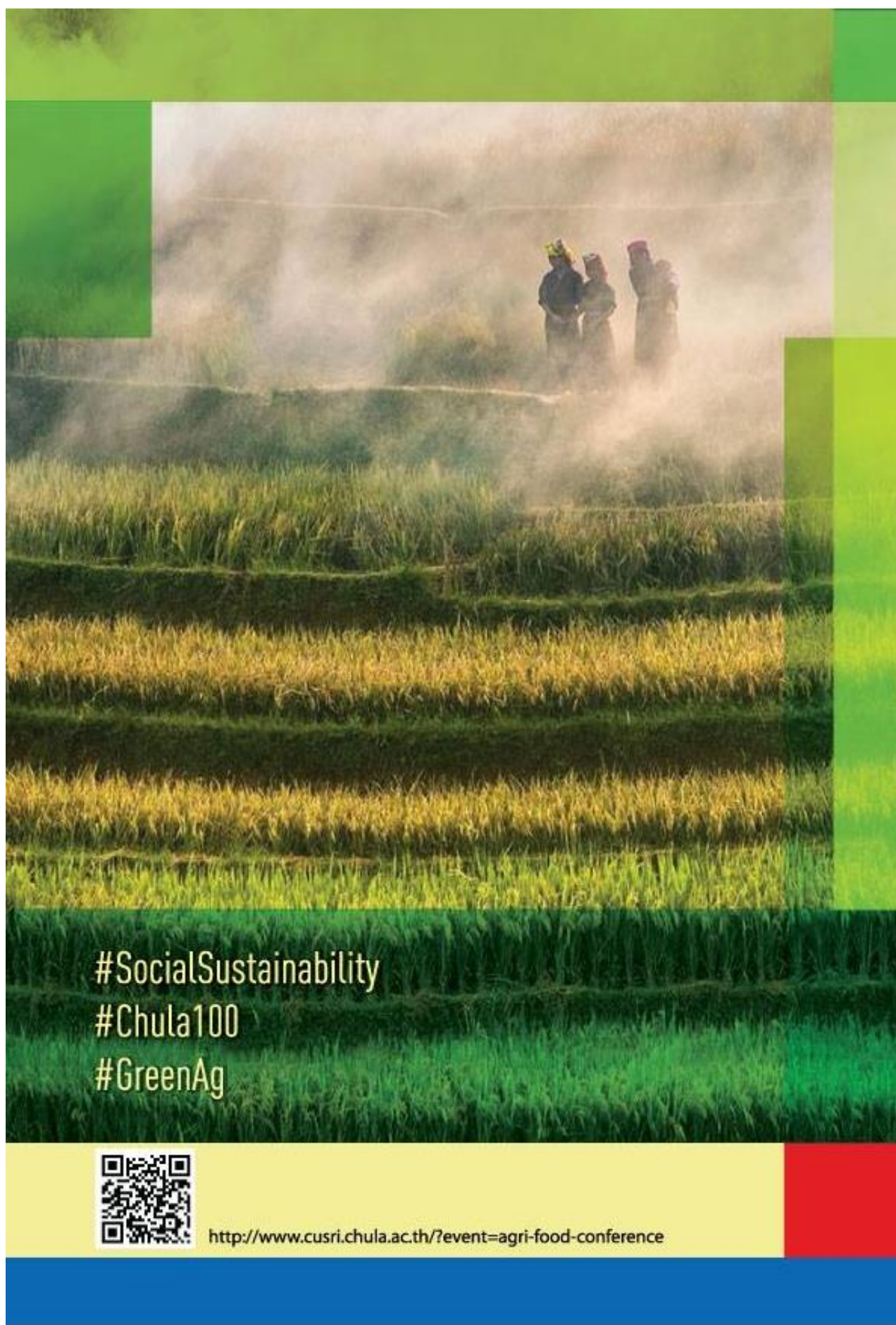
iOS: <https://itunes.apple.com/us/app/id824843908>

Android: <https://play.google.com/store/apps/details?id=com.iseinc.cupopbus>

[SOCIAL SUSTAINABILITY 2018]

Chula Map

Note



#SocialSustainability
#Chula100
#GreenAg



<http://www.cusri.chula.ac.th/?event=agri-food-conference>