



Sustainable Mekong Research Network



Summary Profiles

Research Projects in SUMERNET Phase 3
(2014–2017)

FEBRUARY 2015

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Sustainable Mekong Research Network

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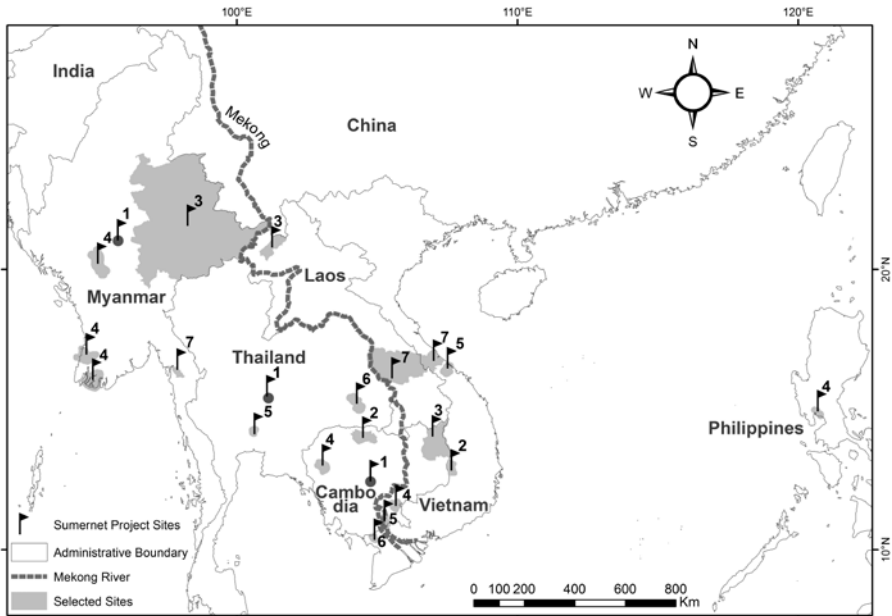
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Dr. Chayanis Krittasudthacheewa
SUMERNET Programme Manager

Bangkok
February 2015

Map of the Mekong Region



SUMERNET Projects

1. Comparative study on national REDD+ strategy in Cambodia, Myanmar and Thailand (REDD+ in the Mekong)
2. Understanding, classifying and mapping human use and natural resources in pilot wetlands of Cambodia and Vietnam to promote sustainable development: A collaboration to study small wetlands (Collaborative study of small wetlands)
3. Gendered impact of cross-border agricultural investment: Case of rubber plantations in Northern Laos, Myanmar, and Cambodia (GIAI-Rubber)
4. Adaptation pathways for climate-resilient development: Selected cases in Cambodia, Myanmar, and the Philippines (Adaptation pathways for CRD)
5. Turning rice straw into cooking fuel for air quality and climate co-benefit in selected GMS countries (RS co-benefits)
6. Recovering and valuing wetland agro-ecological systems and local knowledge for water security and community resilience in the Mekong Region (RECOVER)
7. Impacts of the east-west economic corridor on local livelihoods and forest resource in Mekong River region: case studies of selected forest-dependent villages in Vietnam, Laos and Myanmar (EWEC-FC)

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Introduction



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Introduction

Since its inception in 2005, Sustainable Mekong Research Network (SUMERNET) has established a successful and expanding regional research network with expertise in several policy areas critical to sustainability of the Mekong Region. SUMERNET aims to inform and influence policy-making in the Mekong Region towards more socially inclusive and gender-responsive sustainable development.

SUMERNET is a collaboration of more than 50 research and policy-making institutions with a strong track record of research that can serve as the basis for effective policy on natural resources management.

In 2014, SUMERNET launched its Phase 3 to further strengthen its strategic position towards putting knowledge-based policy engagement at the heart of its activities.

SUMERNET Phase 3 will support the formation of long-term innovative partnerships among research institutions, knowledge users and policy makers at different levels and in different sectors through four programme components: (1) deliver credible research, (2) convene and contribute to regional assessments, (3) communicate and engage with the policy process for impact and visibility, and (4) ensure effective management, network sustainability and monitoring and evaluation.

SUMERNET Phase 3 will focus on three research themes:

- **CLIMATE-COMPATIBLE DEVELOPMENT:** Climate-compatible development means promoting human development while addressing both mitigation of, and adaptation to, climate change.
- **ECOSYSTEM SERVICES FOR LOCAL DEVELOPMENT:** Ecosystem services need to be appropriately valued and protected to ensure they can benefit local development in rural and peri-urban settings.
- **SUSTAINABLE REGIONAL ECONOMIC INTEGRATION:** Both environmental sustainability and social equity are essential in a region experiencing rapid economic growth while poverty and inequality remain significant.

Research projects in phase 3

This booklet provides summary profiles of the **seven research projects** that will be undertaken in SUMERNET Phase 3. These profiles are based on the full project proposals that were submitted by the project partners to SUMERNET.

In March 2014, SUMERNET called for and approved concept notes for research projects. Then about ten shortlisted concept notes were invited to submit full proposals. In December 2014, a total of seven research projects were selected for receiving the research grants funded by the Swedish International Development Cooperation Agency (Sida) and Lower Mekong Public Policy Initiative (LMPPPI).

The research grants are being provided to a consortium of research institutes, universities, non-governmental and civil society organizations. The minimum requirement is that at least two organizations, from at least two different countries within the Mekong Region, participate in each research project. Projects will be for a duration of about 20 months.

Summary Profiles of the Research Projects in Phase 3

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PROJECT 1

Comparative study on national REDD+ strategy in Cambodia, Myanmar and Thailand (REDD+ in the Mekong)

SUMERNET Theme

This research project is directly relevant to the SUMERNET theme on CLIMATE-COMPATIBLE DEVELOPMENT, focusing specifically on addressing global climate concerns through REDD+ interventions by documenting empirical experiences from Cambodia, Myanmar, and Thailand.

Abstract

The Warsaw Framework for Reducing Emissions from Deforestation and Forest Degradation (REDD+), adopted at COP19 of the UNFCCC mandates that to be eligible for REDD+, participating countries such as Cambodia, Myanmar and Thailand need to develop national policies and measures for REDD+ implementation. To complete this national REDD+ strategy, participating countries will have to provide information on key topics such as safeguards, grievance mechanisms, benefit sharing mechanisms, drivers of deforestation and degradation, measuring, reporting, verification (MRV) and monitoring, and national REDD funds. The main objective of this research project is to compare the processes, challenges and opportunities that Cambodia, Myanmar and Thailand have and/or will face in the development of their REDD+ national strategies.

Research questions

Specifically, this research project will address the following questions:

1. How can Cambodia, Myanmar and Thailand ensure that their national safeguards frameworks address all the potential REDD+ social and environmental risks while at the same time taking into account national sovereignty and legal contexts?
2. What factors should the three countries take into account to establish effective, efficient and equitable national REDD+ grievance mechanisms?
3. To what extent do stakeholders in the three countries consider REDD+ as a mechanism that will help contribute to empowering forest-dependent communities to exert a greater influence on local land use policy and practice?

Objectives

1. **Social and environmental safeguards:** To document lessons learned on the gaps between legal contexts in the three countries in comparison with the requirements of the United Nations Framework Convention on Climate Change (UNFCCC) adopted decisions on safeguards and Safeguards Information System, in particular the Cancun Agreements and the Warsaw Framework on REDD+. The research team will also explore the potential social and environmental impacts, including gender considerations, of an elaborate versus a minimalistic design for safeguards information system in the three countries.
2. **Grievance mechanism:** To compile a list of criteria that stakeholders in Cambodia, Myanmar and Thailand identified as important factors that need to be taken into account to establish effective, efficient and equitable national REDD+ grievance mechanisms.
3. **Impacts of REDD+ interventions:** To document cases on the impacts of REDD+ readiness processes on dis/empowering forest-dependent communities, including gender considerations, to exert greater influence on local land use policy and practices.

Methodology

Methodologically, this study utilises qualitative comparative analysis that includes methods such as key informant interviews, observations of REDD+ policy processes, and extended archival research to answer the proposed questions.

Stakeholder identification

This research project defines a stakeholder as an individual or a group who is affected by, or can affect, the realization of REDD+ policies in Cambodia, Myanmar and Thailand. To identify stakeholders, the procedure begins with the research team in the three countries reviewing:

1. REDD+ national policy documents, especially the Readiness Preparation Plan (R-PP) submitted to the Forest Carbon Partnership Facility (FCPF) and/or United Nations (UN)-REDD Programme, grant agreements subsequently approved by the World Bank (or equivalent documents of other FCPF Delivery Partners) under the FCPF, and National Programme Documents subsequently approved by the participating UN Agencies under the UN-REDD Programme;

2. REDD+ feasibility studies conducted by different organizations;
3. newspaper articles, radio broadcasts; and
4. suggestions from in-country REDD+ experts on who to include as stakeholders.

Stakeholders will be grouped into three levels (international, national, and local) to correspond with their engagements in the REDD+ policy processes in the three countries and categorized as governmental bodies, non-governmental organizations, indigenous peoples/local groups, private sector, and academic/research institutions.

Key informant interviews

The research team in each country will aim to conduct up to 80 in-person, semi-structured interviews with the different groups of stakeholders. The interviews will offer a first-hand account of the criteria that different groups of stakeholders would use, and their justifications for using those criteria to assess the different components of national REDD+ frameworks such as safeguards, grievance mechanisms and impacts on local land use policy and practices. The research teams will ensure that interviewees are comprised of representatives from the five categories of stakeholders described above. Interviewing up to 100 stakeholders will provide sufficient data to understand the similarities and differences amongst the stakeholders in each group.

Participant observation

In addition to compiling individual accounts, empirical observation on how the different groups of stakeholders engage in REDD+ policy dialogues/processes is required to understand how stakeholders are engaged/disengaged in these arrangements and processes that produce and examine the various existing policies and measures in the three countries.

These arrangements in general include (1) National Climate Change Committee, (2) REDD+ Advisory Group, (3) REDD+ Taskforce, (4) REDD+ Taskforce Secretariat, and (5) the Technical Teams and/or Working Groups.

Answers to these questions will enable the research team to analyze the social challenges, which include issues such as participation, problem framing, scale and timing of information, and management of alternative sources of information.

Boundary partners

In all three countries, researchers from the consortium will inform and engage with existing institutions such as the Forestry Administration of the Ministry of Agriculture and Forestry (MAFF) and the REDD+ Taskforce and its Secretariat (Cambodia), Forest Department in the Ministry of Environmental Conservation and Forestry (MOECA) and REDD+ Taskforce (Myanmar), Department of National Parks and Wildlife Conservation of the Ministry of Natural Resources and Environment (MONRE) (Thailand), civil society organizations related to REDD+ networks, and indigenous peoples working groups on REDD+.

Researchers will communicate regularly with these boundary partners on the progress, opportunities and challenges of the research project. The main intentions for these communications are twofold: (1) to gather constructive feedback and comments from these organizations; (2) to share with them results from this research in order to increase the saliency, credibility and legitimacy of research findings. The ultimate goal for this engagement, in short, will be to increase the chances that findings from this research will be incorporated in the REDD+ national strategy of the three countries.

Policy impacts expected

Researchers in this research project will ensure close collaboration with REDD+ coordination arrangements in the three countries. For example, representatives from government and non-government institutions were consulted in the design of the original concept note, and this full proposal, especially on the questions that they considered important for a national REDD+ strategy. This participatory approach ensures that stakeholders in the three countries are informed about the research as it progresses, thus ensuring the credibility and relevance of the research findings. Finally, various meetings, conferences and training events are conducted at the national and local level in the three countries to increase awareness on REDD+ and to welcome comments from various stakeholders on how the different components for a REDD+ national strategy (e.g. safeguards, grievance mechanisms) should be designed. Therefore, researchers in this project will seek opportunities to present our on-going results at these venues.

Outputs

This research project will produce three peer-reviewed journal articles. The first article focuses on the practical implications of a minimalist versus an elaborate national REDD+ safeguards framework in Cambodia, Myanmar, and Thailand. The second article reports on criteria that stakeholders in the three countries consider important for effective, efficient and equitable national

REDD+ grievance mechanisms. The third article documents cases on the impacts of REDD+ readiness processes on dis/empowering forest-dependent communities, including gender considerations, to exert greater influence on local land use policy and practices in Cambodia, Myanmar, and Thailand. Findings from this research will also be published in an edited book to be published by SUMERNET, policy briefs, and other communication products for dissemination to the general public.

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PROJECT 2

Understanding, classifying and mapping human use and natural resources in pilot wetlands of Cambodia and Vietnam to promote sustainable development (collaborative study of small wetlands)

SUMERNET Theme

This research project is directly linked to the theme ECOSYSTEM SERVICES FOR LOCAL DEVELOPMENT.

Abstract

This research project seeks to define how people, fish, birds and wetlands are connected in the Mekong River Basin. Fish and birds utilize wetlands and are crucial to the overall richness of biological diversity in the Mekong Region. People also benefit greatly from wetland resources, but these uses cannot be incorporated into sustainable use plans unless they are understood and mapped. In the process of defining this relationship between wetlands and biological diversity, the proposal also endeavors to map the natural wetlands of the study areas and devise a classification system for these wetlands. Both the map and classification systems can help scientists, managers and decision-makers to better communicate the values inherent in these critical wetland ecosystems in the region.

Research questions

The specific research questions are:

1. Where are the wetlands of Kulen Promtep Wildlife Sanctuary and Yok Don National Park located and how can we map them?
2. What ecosystem products and services do small wetlands in Kulen Promtep Wildlife Sanctuary and Yok Don National Park provide, including ecological functions?
3. How do variations in wetland size, geomorphology, and hydrology influence bird and fish diversity?
4. How do different kinds of development affect (in terms of both products and services) the various wetland types?
5. How can small, scattered wetlands in Cambodia and Vietnam (in the tens of thousands) be classified?

Objectives

Although there are likely more than 12,000 natural, small wetlands in Cambodia alone, these important ecosystems have not been examined in much detail anywhere in the Mekong Basin. Importantly, this estimate of natural wetlands does not include reservoirs or other human-made wetlands. Future phases of this work will expand from the foundation developed in the pilot areas to wetlands throughout the Mekong Basin. River development and changes in land-use are likely to alter these systems tremendously in the future. Without a basis for defining what, and how, wetlands and their associated biological diversity might be affected, it is impossible to understand the full impact of any proposed or planned development project.

The specific objective for this research project is to conduct wetland assessments by sampling natural ecosystems in two pilot areas, one in Cambodia and one in Vietnam, that serve as bird and fish habitat, as well as providing other valuable ecosystem services. These direct-sampling and social surveys will provide bird, fish, and wetlands data to develop a wetland inventory that is spatially explicit and thus expandable.

Short-term goals:

1. Advance understanding of the value of wetland ecological functions and ecosystem products and services through a survey of relatively unknown wetlands in pilot areas of Cambodia and Vietnam.
2. Build capacity for member institutions of two networks to collect and manage standardized data.
3. Provide researchers and policy makers with comparable scientific baseline information and tools needed to understand regional wetland ecosystem health and biodiversity, human use and inform effective management.
4. Establish a basis through which more extensive surveys can be accomplished in future surveys by engaging students trained in this study to become the trainers of additional members of the Mekong Fish Network (MFN) and Network for Wetland Research and Training in the Mekong Region (WUN),

Methodology

Wetlands are relatively small with size ranges from 0.3 hectare to 100 hectares and they are scattered throughout the study areas in both countries. In Kulen Promtep Wildlife Sanctuary, the average wetlands size is typically larger than 1 hectare; in Yok Don national park, however, most wetlands are smaller than 0.5 hectares. Collectively, wetlands in both conservation areas span a useful range in size, water permanence and geomorphology so that our classification system

will likely cover a large variety of wetland types. Smaller wetlands are difficult to detect with Landsat 7 imagery. To locate small wetlands on maps that we create, we will use different resources that are available and free aerial imageries on Google Earth. Ground truth data will be very important to create a model for mapping the other wetlands that are not surveyed.

The research project will conduct surveys of wetlands, and associated bird and fish diversity, by sampling ecosystems in and near two conservation areas of Cambodia and Vietnam that may serve as fish breeding or nursery habitats – Kulen Promtep Wildlife Sanctuary and Yok Don National Park. Data on water permanence and quality, soil characteristics, flora and fauna (i.e., plants, birds and fish), as well as socio-economic conditions from nearby villages or from reserve guards (e.g., information on livelihood activities, integrating a gender perspective), will be collected. Human surveys will provide data not only on wetland resource use but also on long-term hydrological trends and fish use.

For birds, a transect will be established from the wetland center and extend through the wetland and into the surrounding forest, and bird diversity will be determined by visual inspection or vocalizations. Fish sampling will be conducted directly by standardized trapping techniques and indirectly through interviews with reserve guards or fishers living nearby using relevant survey techniques. Wetland parameters will be determined using both GIS tools, ground verification in the wetland (mapping perimeter, deepest point, channel inflows, etc.), vegetation and interviews with people familiar with the wetlands to understand water permanence.

Collecting comparable biological and hydrological data in Kulen Promtep and Yok Don allows for analysis at different spatial scales, comparisons among different levels of alteration and development, and assessing changes over time as areas become more developed. How local people use wetlands will also be examined through interviews so that cost/benefit analysis of local use can be compared with similar analysis of larger scale conversions such as for rubber plantations.

The data from field studies will be compiled into a wetland inventory, as well as a map of wetland distributions in pertinent areas of Cambodia and Vietnam that depict key physical and biological characteristics of these scattered wetlands. These maps, in turn, can then be used to predict impacts of various proposed development projects.

Boundary partners

There are numerous organizations and government agencies that would benefit from the outcomes of the proposed study. The specific boundary partners engaging in this study are:

- Department of Wetlands and Coastal Zones in the Ministry of the Environment (MOE), Cambodia. Specifically, His Excellency Say Samal has taken a personal interest in this proposed wetland research, as has Dr. Sray Sunleang, Director of the Department of Wetland and Coastal Zones. MOE has the primary responsibility for wetlands management for Cambodia and specifically for Kulen Prontep Wildlife Sanctuary.
- Forestry Department in the Ministry of Agriculture, Cambodia. His Excellency Ty Sokhun also supports additional wetlands research as we envision here along with Dr. Keo Omaliss, Director of the Department of Wildlife and Biodiversity, the person responsible for implementing wetlands work.
- Yok Don National Park (Vietnam) and Kulen Promtep Wildlife Sanctuary (Cambodia)
- Mekong River Commission (MRC)
- Government of Vietnam (environmental ministries)
- Environmental and Conservation Non-Governmental Organizations (NGOs): Though most NGOs are well aware of the importance of the small wetlands in the open forest, they do not have a coherent way to talk about them. Our classification system and map of wetlands will serve as an important tool for them to better understand and plan conservation activities.
- Provincial Level Fishery Resource Management Units in Vietnam, and at the sub-national level comprise stakeholders of joint agreements in Vietnam that exist for sharing fisheries management information. Fisheries management organizations would benefit from an inventory of fish and other aquatic organisms present in these wetlands and how they are utilized by the nearby inhabitants.
- Communities living near and depending upon these wetland habitats.

Policy impacts expected

For policy makers to make science-based decisions that influence regional wetland ecosystems, they need credible scientific information from trusted expert sources. Data can be used to engage people with identifying and empowering alternative ways that these small wetlands can be developed more sustainably. The first step in this process is to identify that these wetlands exist and to map where these wetlands are so that we can create model sites to develop alternative development scenarios that protect biological diversity. Though this step may seem simple it is a crucial first step that has not been taken after 20 years of these wetlands being documented to some extent.

Participants in our research project will engage with policymakers and community members at the local and national levels and provide key information

about wetland ecosystem health. Four project meetings will be conducted with core boundary partners. We will meet with staff of Kulen Promtep Wildlife Sanctuary and with people living around that conservation area. The same will be done for Yok Don National Park and surrounding participants. We will also host meetings with relevant staff from MoE and from FA in Cambodia. However, meetings with Vietnamese governmental officials at the national level is beyond the scope of this research project, especially since the number of scattered wetlands found in Vietnam is likely to be small.

The research results will be published in peer-reviewed scientific journals and summarized for wider use in newsletters, newspapers, blogs and websites, to disseminate the findings to decision makers and the general public. We will require that students present their work during at least one relevant regional conference attended by policy makers (e.g., the Shared Waters Partnership Mekong Workshops). Through these engagement opportunities our researchers will promote the importance of science-based decision-making and the relevance of our research to specific decisions made by various stakeholders.

Specific policies (related to boundary partners):

- **National-level decision-making:** Cambodia (Ministry of the Environment and Ministry of Agriculture) – The wetland maps, if adopted, will be used as tools to influence development plans and other resource management decisions. Lands in wildlife sanctuaries are still being lost to development in Cambodia as governmental agencies allow development to continue encroaching on conservation areas. We will use the research findings to engage the ministry with identifying and empowering alternative ways that these small wetlands can be developed more sustainably. Results of this study will be presented in several formats to the Ministry of the Environment and the Ministry of Agriculture, thus this policy impact would occur mostly after the project completion.
- **Local-level decision-making:** Yok Don National Park (Vietnam) has often destroyed small wetlands by digging them out so that water remains in them all year. Other management actions at both parks have worked at cross-purposes as well. These management actions reflect an incomplete understanding of the role that small, natural wetlands play. Digging wetlands out does provide permanent water, an important asset to wildlife in the open forest. But digging out the wetlands also has the unintended consequence of destroying nesting habitat for most wetland bird species and reduces overall biological diversity. By providing important data on the biological diversity of all different habitats (inundated seasonally as well as year-round), the research project can influence the parks' decision to engage in this practice. This impact could happen during the course of the project, and we can provide the park management with preliminary information for their use.

Outputs

Study outcomes will be communicated and documented in various high-visibility media that will engage a variety of stakeholders, including policy makers, peer researchers and the general public.

- Three peer-reviewed journal articles – One journal article written by each of the three graduate students.
- One book chapter (for the SUMERNET edited book) that would focus on the process of classifying these wetlands and assessing their ecosystem services.
- One policy brief (translated into Khmer and Vietnamese) intended to provide decision makers with comparable scientific baseline information needed to understand the health and biodiversity of these little known wetlands habitats, and inform effective management and development decisions.
- One press release (translated into Khmer and Vietnamese) for general public describing the results of the one-year study.
- One short YouTube video to engage the general public and policy makers – describing the field work, interviews in the field and showing the graduate students in the field (focusing on the capacity building element).
- Blog posts on Mekong Fish Network website describing work in progress and findings.

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PROJECT 3

Gendered impact of cross-border agricultural investment: Case of rubber plantations in Northern Laos, Myanmar, and Cambodia (GIAI-Rubber)

SUMERNET Theme

The research falls under the theme of SUSTAINABLE REGIONAL ECONOMIC INTEGRATION in analyzing the implications of transboundary flows on people and environments in the border regions.

Abstract

The GMS region has seen a large number of cross-border investment projects in the field of agriculture. In Lao PDR and Myanmar, the investors come from China, whereas Cambodia receives investments from Vietnam. There has been considerable research on the impacts of contract farming with Chinese companies, and rubber plantation investments. However, most of the studies so far have used the household as the basic unit of analysis, and do not attempt to differentiate its impact on women and men. Anecdotal evidence shows that women bear the socio-economic costs of transition to rubber production. Through gender analysis, we will be able to develop a holistic understanding of changes in livelihood following the development of rubber plantations. This research project will compare three countries: Laos, Myanmar and Cambodia.

Research questions

The overall research question is: What is the gendered impact of cross-border rubber investment in each of the three countries (Laos, Cambodia and Myanmar) and how can inclusive investment policies be shaped? In order to answer this question, we conduct a gender analysis with special focus on three dimensions: people's livelihood change, rubber plantation benefit-sharing mechanism, and cross border investment policy. Specifically, the study seeks to answer the following questions:

1. How and why has women and men's access to farmland and forest products changed with the expansion of rubber plantations by foreign companies?
2. How and why do different types of benefit sharing models of rubber plantations shape women and men's benefits from rubber plantations and their bargaining power vis-a-vis the companies?
3. How do the economic and trade policies of Laos/Myanmar/Cambodia with respect to their neighbouring countries shape the arrangement and management of rubber plantation in these countries?

Objectives

In order to contribute to evidence-based inclusive investment and trade policy development, the research project aims to carry out a gender analysis on the impact of cross-border rubber investment in the three countries (Laos, Cambodia and Myanmar).

With a focus on northern Laos, this research will also study the situation in Northeastern Cambodia and Northern Myanmar to compare the different approaches and arrangements under different socio-political frameworks. The overall development goal of this research project is to explore policies on cross-border agriculture investment that will protect the rights of small farmers, especially marginalized women farmers.

Specific objectives are to:

1. Analyze the impact of rubber plantation on small farmers' livelihood options, gender roles and intra-household gender relations.
2. Compare how different investment and payment schemes, ethnicity and location, impact on livelihoods and gender relations.
3. Explore how and why such differences occur, and how investment and trade policies are shaping such terms of trade and gendered power relations at the grassroots level.
4. Investigate how the strategies and agencies of women and men farmers shape the way investments and payments by companies are implemented.
5. Strengthen policy recommendations that already exist on the issue of rubber plantation expansion, for a more specific and gender-sensitive investment policy.

Methodology

Noting that the main focus of this study is to analyze the gendered effect of rubber investment, our methods consist of (1) Qualitative data mainly from semi-structured interviews, focus group discussion and in-depth interviews. This will enable us to understand the linkages of different factors that influence the outcome of rubber plantation investment. (2) Quantitative data through household survey would enable us to understand the extent of the change in terms of income generating activities, gender division of labor, and income.

Specifically, the following research methods will be employed:

1. Key informant interviews with government officers, village heads, rubber companies in each of the three countries. Also if additional funds are available, the research project will undertake interviews with the company

and government officers in the Chinese side (Yunnan province) for better understanding of the operation and their understanding on the regulation on investment as well as their relationship with the Lao and Burmese communities. Key informant interviews is conducted not only to collect information, but also to serve as a benchmark for change in attitude of local government officers and village leaders, who are boundary partners.

2. Focus group discussion with villagers (women's group, men's group, youth group, elderly group). The purpose of the discussion is to get an overall idea of the trend in the villages and the perception of the people about rubber plantation and the changes that accompany thereafter. It will also allow the research project to understand how the villagers are coping with the changes and negotiating with the authorities and company. These discussions will also be a venue where women and men farmers express their opinion publicly. They are the boundary partners, and it is considered that such experience in expression will help better express their opinions in public settings in the future.
3. In-depth interviews of households. The research project will select about five households per village and study in detail the transformation of their livelihood patterns chronologically over the past two decades (when the rubber plantations started to expand). Several members of the households, both women and men, young and old, will be interviewed separately to learn about their individual experience of the changes, and how they have made the decisions. Our assumption is that household members experience the changes differently because of their intra-household relationship as well as gender norms in the society.
4. Household survey. The research project will select at least 30 households or 30% of the total households (whichever is larger) in the selected villages for household survey. If there is a household list in the village, the research project will use it for random sampling. If not, one household will be selected in each three household cluster. The respondents will include equal numbers of women and men. After selecting the household, the team will interview women and men interchangeably for each selected household, so that in the end, there will be an almost equal number of women and men respondents. Aside from the background information of the responding household, the questionnaire will ask about changes in sources and composition of household income in the past 10 years and changes in division of labor in the household. The research project aims to have around 100–150 household survey respondents each for Cambodia and Myanmar, and around 200–250 for Laos.
5. Policy dialogue. Findings of the research are verified with community women and men, and local authorities, and recommended changes will be discussed in this forum, which will be organized only in Laos and Myanmar. The research findings are used as a discussion starting point and

this venue is aimed to contribute to gaining more experience for public negotiation for the women and men in the community. The dialogue will be organized in the study district in each country. Recommendations that are discussed during this dialogue will also be based on earlier recommendations being done by other researchers, and will be formulated and discussed in a more contextualized manner. Special attention will be given to the voices of women farmers.

6. Comparison across investment types and across countries. During the mid-term workshop, findings from the three countries will be shared and comparative analysis will be made.

Boundary partners

The key boundary partners are:

- Local government authorities (provincial and district)
 - In Laos, the district chief and officers in Luang Namtha district and Vieng Phoukha district.
 - In Cambodia, officers in the Provincial Department of Agriculture in Rattanakiri province.
 - In Myanmar, forestry officers of Shan State.
- Village leadership.
- Academic community.

The research project will further work with these partners:

- NGOs working in the study area (especially those who are working on women's issues).
- Women's Union (Laos)/Gender focal points in the Commune Council (Cambodia).
- Women's group in the community.

We would like to influence or bring about changes with the following boundary partner, but probably in a limited capacity:

- Private sector (rubber plantation companies).

Policy impacts expected

In the countries under the study, there is a policy to promote intensive investment in agriculture land through various plans and laws. The research project will refer to the principles of responsible agriculture investment that respects rights, livelihoods and resources, and the voluntary guidelines for the responsible governance of tenure of land, fisheries and forests in the context of national food security of FAO.

There are already a number of recommendations on these above issues made by NGOs and academics. The research project will not reinvent the wheel, but build on the existing recommendation and identifying the barriers in its implementation. The existing recommendations focus on technical and financial support for small farmers, strengthen producer groups, strengthen control by government, and foster corporate social responsibility (CSR) among investing companies.

The study will contribute to this by providing more context and concrete action that not only strengthens the negotiating power of small holders as a whole but also the visibility of women's and men's differential needs and negotiation power.

Outputs

1. Project report.
2. Twomaster's thesis at AIT (one on Cambodia, and one on Myanmar).
3. Two peer reviewed journal papers and one book chapter: Tentative titles include: Gendered impact of rubber plantation investment; Social embeddedness in livelihood responses: Gender analysis of different options for ethnic groups under rubber plantation investment; Gender and regional economic integration policies: Cross-border rubber investment and trade in GMS.
4. One policy brief with a tentative focus on Laos and cross-border rubber investment policy (e-publication).
5. Newspaper articles in the local language, one each in Laos and Myanmar).

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PROJECT 4

Adaptation pathways for climate-resilient development: Selected cases in Cambodia, Myanmar, and the Philippines (adaptation pathways for CRD)

SUMERNET Theme

The project will address the theme of CLIMATE-COMPATIBLE DEVELOPMENT.

Abstract

Cambodia, Myanmar and the Philippines have repeatedly experienced extreme climate events such as typhoons, flooding and drought causing severe losses and damages to crops, properties and livelihood. Climate projections indicate that changes in rainfall and temperature could aggravate agricultural productivity losses.

Despite the repeated occurrence of climate-related events, responses of households, communities and local government units (which are often the development planners) focus on the short-term, rather than long-term. But short-term response is merely coping. Developing climate resilience will require longer term adjustments, referred to as adaptation which has to be integrated in development processes.

The research project will provide understanding of adaptation decisions of communities and local development planners frequently affected by climatic related hazards. Tracking and examining adaptation strategies will reveal if these are building the community's climate resilience or incompatible with local development. This could guide policy makers and planners mainstream adaptation to climate-related hazards in development planning.

Research questions

1. What climate hazards have the study areas faced over time? What have been the impacts of these hazards on households, communities, and local government units or development planners?
2. What have been the adaptation strategies of households, communities and local planners to cope with the effects of climate-related hazards over time? How did these strategies evolve? What was the tipping point that triggered change in adaptation strategies?

3. Have these adaptation strategies been compatible with local development and improving community resilience? Did these reduce the impacts of the ensuing climate-related hazards?
4. What adaptation strategies are households, communities and local government units/development planners planning to prepare for climate-related hazards events in the future? Are these supporting a climate-resilient development? What should be done to integrate climate resilience and socio-economic development?

Objectives

1. To identify climate-related hazards that have affected households, communities and local government units and assess the impacts of these hazards over time;
2. To track adaptation strategies of households, communities and local government units to cope with the effects of climate-related hazards overtime and examine what triggered change in adaptation strategies;
3. To determine if adaptation strategies have been compatible with local development and improving community's climate resilience;
4. To identify adaptation strategies households, communities and local government units are planning to prepare for climate-related hazards in the future; and
5. To recommend measures to integrate climate resilience and socio-economic development.

Methodology

For each country, four rural communities in provinces or regions that are constantly affected by climatic-related hazards will be chosen as study sites. These communities are local level government units that can refer to a district in Cambodia and Myanmar; or a municipality in the case of the Philippines. Selection of the most vulnerable areas (e.g., villages, commune) will be done in consultation with local authorities. Based on reported losses and damages due to flooding and drought in the last ten or more years, these provinces will include Battambang and Prey Veng in Cambodia; Ayeyarwady and Magway regions in Myanmar; and Bulacan and Pampanga in the Philippines.

Areas to be covered and number of study communities and households

Country	Province/Region	District/Municipality	Number of Households
Cambodia	Prey Veng province	KamchayMear district	100
	Battambang province	Banan district	
Myanmar	Ayeyarwady region	Pathein and Latbutta districts	100
	Magway region	Magway and Yenanchaung districts	
Philippines	Pampanga	Municipality of Guagua	100
	Bulacan	Municipality of Paombong	

Primary data will be gathered through household surveys, key informant interviews (KII), and focus group discussions (FGD). Data on household socioeconomic profile, types of climate hazards experienced, their impact on livelihood, and adaptation strategies implemented will be gathered through the household survey.

At the community level, secondary data on climate hazards and impacts, socio-demographic characteristics and development indicators of study areas will also be gathered from various sources. Climate change adaptation and/or disaster risk management plans, and development plans will be obtained from local and sub-national government units.

Adaptation strategies and adaptation pathways across the three countries will be compared to draw lessons and possible policy recommendations. In the process, adaptation strategies and adaptation pathways will be identified for integration in each country case (study area) development plan to ensure climate resilience.

There will be two stages in the determination of adaptation pathway comprising of Project Stage and Post-project Stage (see figure below). The Project Stage shall involve three phases, namely, pre-planning phase, adaptation pathways assembly phase, and dynamic adaptation planning phase. On the other hand, Post-project phase involves monitoring and sustainability. Specific activities are indicated in the framework below. The activities indicated under the first stage shall be conducted within the 2-year (20 months) timeframe of the research project. Meanwhile, the activities identified under the second stage are expected to be implemented after the project life and sustained at the local level and/or sub-national level institutions.

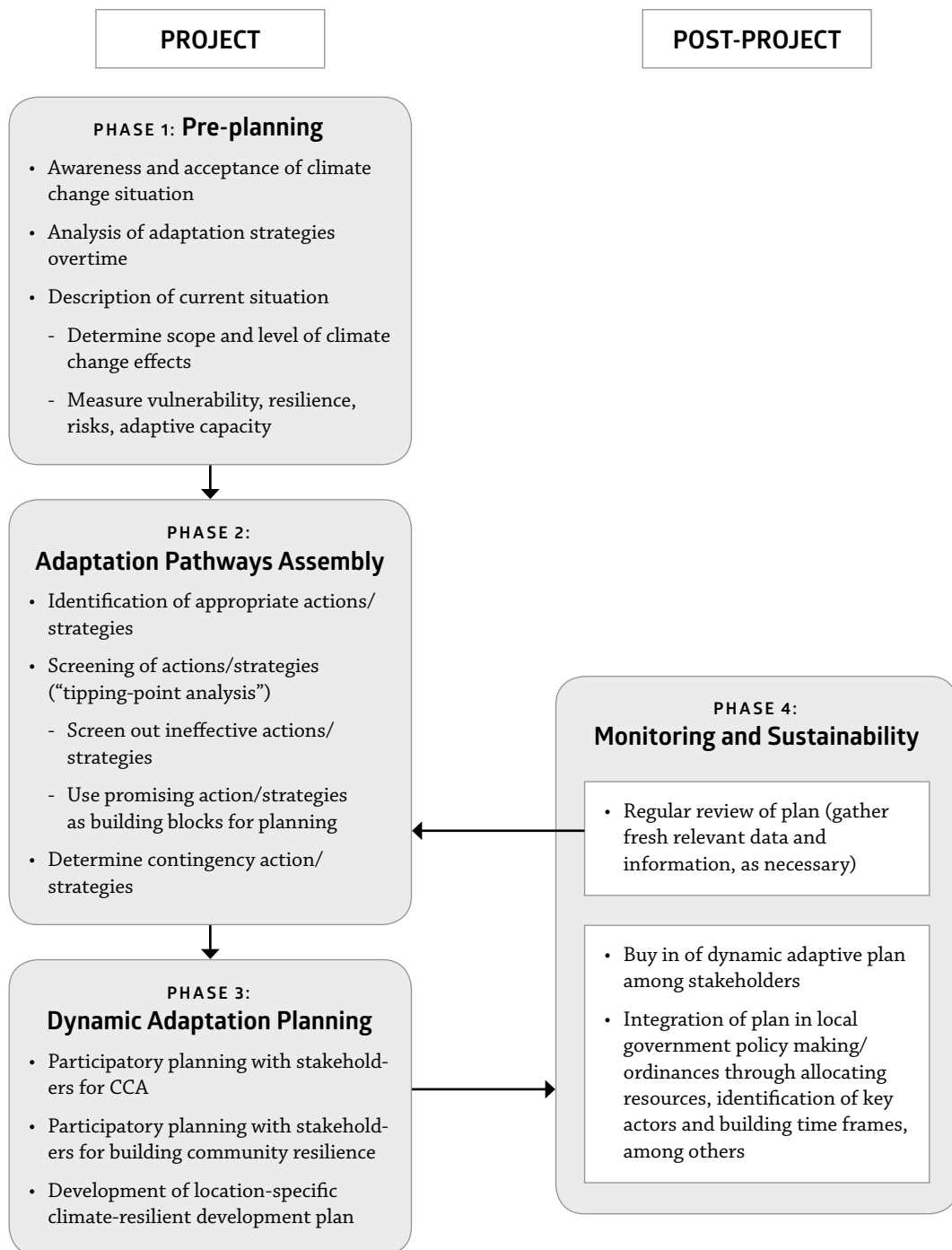


FIGURE 1. Adaptation Pathway towards Community Resilience: Methodological Framework (Adapted from Britton, et al., 2011 and Haasnoot, et al., 2013)

Boundary partners

Local level institutions/government units in the study areas:

- Cambodia – local authority unit.
- Myanmar – local counterpart of ministry of planning.
- Philippines – municipal government units.

Sub-national level institutions involved in disaster risk management and/or climate change adaptation and development planning include:

- Cambodia – Provincial Committee for Disaster Management (PCDM) and District Committee for Disaster Management (DCDM) in both provinces and the district office.
- Myanmar – Regional/State (sub-national level) counter part of the Ministry of Planning.
- Philippines – Regional office of economic planning and development authority; regional office of disaster risk reduction and management.

Policy impacts expected

This research project will have a strong policy impact by providing policy makers at the local, subnational, and national levels with knowledge and appreciation of the people's adaptation behaviour and various phases of adaptation pathways that they can apply in planning towards climate resilient development. The target policy makers are not only those who are directly concerned with disaster risk reduction and management (DRRM) and climate change adaptation (CCA) but also with sustainable development encompassing poverty alleviation, social development and environmental management.

The participation of local development planners as boundary partners in the entire research process already provides an avenue for informing policy. Policy and decision makers will acquire knowledge on the basic elements of risk/adaptive management, vulnerability assessment and resilience enhancement, which can help them identify tipping points that require policy action and upscale research results. Lessons learned from this research shall be disseminated to policy makers to influence climate compatible development efforts.

Outputs

1. At least two peer-reviewed papers on adaptation pathways for journal publications.
2. One book chapter synthesizing the research results for the SUMERNET Phase III book.
3. Three policy briefs on climate compatible development planning directed towards the policy makers in the three countries.
4. At least one scientific paper on adaptation pathway analysis for climate compatible development for presentation in local and international conferences.

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PROJECT 5

Turning rice straw into cooking fuel for air quality and climate co-benefit in selected GMS countries (RS co-benefits)

SUMERNET Theme

Rational use of RS as alternative fuel for improved cookstoves to reduce emissions of both GHGs and SLCPs is in-line with the SUMERNET theme of CLIMATE-COMPATIBLE DEVELOPMENT.

Abstract

Most countries in the Mekong Region are agrarian developing countries where rice is a staple food that provides 50–80% of the total calories consumed. A huge amount of rice straw (RS) is generated in each crop cycle. For faster crop rotation, most farmers in the region prefer open burning (OB) of RS in the field to clear the surface biomass. A large portion of RS residue is burned within the region. RS residue is a potential biomass resource specifically for the region. Currently, various options for using RS are available with different levels of acceptance from farmers and community. The suitability of such technologies, to be offered to farmers in order to counteract the OB practice, needs to be considered and explored based on economic, social, and cultural factors particularly to gain acceptance from the end users.

Research questions

The research project will attempt to answer the following research questions:

1. What is the status of RS management in the target countries?
2. What are the RS derived fuels and cookstoves that technologically suitable and economically/socially acceptable by local farmers in the Mekong Region countries?
3. What are the potential impacts on emission reduction of air pollution and climate forcers if such measures are multiplied in the selected countries?
4. What are effective policy options in enhancing multiplication of proposed measures to minimize the OB practice?

Objectives

Most Mekong countries do not have specific national policies to counteract the crop residue OB practice. Therefore, it is very important to facilitate effective communication with policy makers at different levels using various platforms such as technical/policy dialogue and consultative meetings.

The project team ensures that the boundary partners to be involved since the project kick-off meeting. Alternative efficient policy tools, such as market based instruments (MBI) and educative (persuasive, awareness, public participatory, etc.) rather than only the command and control (CAC), should be further explored and discussed with policy makers and other stakeholders in the various communication channels in order to achieve main goals of the research project, i.e. turning RS to cooking fuel or reduce OB. This project would contribute to achieve the major goals of Mekong countries (poverty alleviation, employment, and growth) and at the same time reduce stress on the environment and regional climate.

Moreover, the research project survey will help to understand local specific conditions that can be used together with the input from stakeholders gained at various workshops in the design and selection of technologies. Technology “products” are then demonstrated to the farmers to gain their perception and acceptance.

The concrete objectives of the proposed research project are:

1. To survey the current generation and use of RS in selected Mekong countries.
2. To study RS derived fuel-processing technologies to produce solid cooking fuel (pellet/briquette) and their usage for cooking purposes.
3. To adapt a preliminary design of a RS derived fuel and cookstove system.
4. To assess the acceptability of the proposed fuel-cookstove system to local farmers.
5. To analyze efficacy and potential co-benefits of the technology applications on the Mekong regional scale on air quality and climate forcing.
6. To create an enabling environment for multiple application/installation of the fuel cookstove system by disseminating and communicating the findings to the stakeholders such as rural community, policy makers and academic institutions etc. in the Mekong countries.

Methodology

Task 1: Benchmarking on RS generation, use, and open burning in target countries

Survey of current RS residue generation and usage will be conducted in the selected agricultural areas in Cambodia, Vietnam and Thailand. Several representative agricultural areas will be selected. The survey expects to obtain key information on:

- Typical crop (paddy) to residue ratio (specific for RS) and other characteristics of RS samples such as density, carbon content, etc. for various popular cultivars.
- Typical generation factor of RS per area (metric ton or tonne/ha) estimated using crop to product ratio (CPR) values and paddy yield per ha.
- Existing situation of RS usage (for example, organic nutrients, feed stock, mushroom growing and any other possible options currently practiced).
- Portion of RS being burned in the field and burning practices.
- Motivation of farmers to burn RS and their perception on the negative impacts of OB practices.
- Willingness to implement measures that give benefits in many aspects not only for farmers but also environment.

Task 2: Technology assessment on RS pellets/briquettes mills

A complete literature review on the available technologies to convert bulky RS into pellets/briquettes will be carried out under this task. Rice straw has less moisture content (15–20%) so it is suitable to use for generating heat and electricity or converting into fuel. Characterization of RS samples taken from the region will be done including the proximate analysis. Further investigation will be done particularly for the solidification process of RS.

Task 3. Prototype development and testing of RS derived fuel cookstove

Direct combustion of RS is not desirable because of its high ash content, less fixed carbon and produces a lot of smoke hence not good for health. On other hand, due to the presence of high volatile matter in RS the pyrolysis and gasification will be a better way to utilize rice straw after densification in the form of pellets or briquettes. Therefore, it is important to take initiatives to design and construct a cook stove that is suitable to burn efficiently RS derived solid fuels.

Design and development of prototype of RS derived fuel cookstove system will be conducted based on the available cookstove technologies developed earlier at Energy FoS of AIT.

Task 4: Socio-technological acceptance analysis

Many aspects affecting the uptake of proposed technology by local communities should be considered in the research project. Through the consortium members, the RS fuel-cooking system will be brought to farmers in the study areas for trial use. Hands-on trainings to demonstrate the technology will be conducted in Cambodia and Vietnam. Set of questionnaires will be developed incorporating social, economy, technical and gender aspects and will be distributed to farmers following the demonstration. The survey information will be analyzed and possible inputs and suggestions from local farmers (focusing on women) will be considered in the evaluation of the RS fuel-cooking system.

Task 5: Assessment of co-benefits of technology implementation to reduce field burning of RS

Firstly, emission inventory (EI) for the selected agriculture areas in the target countries will be compiled for base year of 2014 covering residential combustion and RS OB (base case). An emission scenario will be developed with the main assumption that farmers implement “zero burning” and use the RS derived fuels for cooking by the developed cookstove. The emission reduction in this scenario, from base case emission, will be quantified and co-benefits on air quality and climate will be estimated using global warming potential (GWP).

Task 6: Results dissemination and capacity building

A synthesis report on current status of RS residue generation and utilization in three countries will be produced to summarize the results of surveys conducted in the task 1. Publications of innovative findings will be made in international journals as well as a book chapter coordinated by the SUMERNET. Two national workshops will be conducted in Cambodia and Vietnam. For capacity building, students from all consortium partners will be involved in the project activities and two hands on trainings on the RS pellet-briquette preparation and cookstove operation will be conducted in Cambodia and Vietnam for local farmers.

Boundary partners

List of potential boundary partners and their roles

Potential boundary partners	Roles	
Cambodia	Ministry of Agriculture, Forestry and Fisheries of Cambodia	Policy maker
	Ministry of Environment of Cambodia	Policy maker
	Provincial Department of Agriculture, Forestry and Fisheries, Prey Veng Province, Cambodia	Policy maker
	Group for the Environment, Renewable Energy and Solidarity (GERES, www.cambodia.geres.eu), Cambodia	Policy influencer, knowledge producer
	Sustainable Green Fuel Enterprise (SGFE, www.sgfe-cambodia.com), Cambodia	Policy influencer, knowledge producer
	Farmer association of Peam Chor, Cambodia	Policy influencer
Thailand	Department of Agriculture (DoA) of Thailand	Policy maker
	Thailand Pollution Control Department (PCD)	Policy maker
	Municipality and District office of Natural Resources and Environment of Phra Nakhorn Si Ayuthaya, Thailand	Policy maker
	Farmer association of Bang Pha in, Thailand	Policy influencer
Vietnam	Ministry of Natural Resources and Environment of Vietnam	Policy maker
	Ministry of Agriculture and Rural Development of Vietnam	Policy maker
	Office of Natural Resources and Environmental, Huong Tra Town, Thua Thien Hue Province, Vietnam	Policy maker
	Farmer association of Huong Tra, Vietnam	Policy influencer
	SNV Vietnam (www.snvworld.org/en/countries/vietnam)	Policy influencer, knowledge producer
International Organization	Clean Air Asia (CAA, http://cleanairinitiative.org/portal/index.php)	Policy influencer, knowledge producer
	Climate and Clean Air Coalition (CCAC, www.unep.org/ccac/)	Policy influencer
	Global Alliance of Clean Cookstoves (GCAC, www.cleancookstoves.org/)	Policy influencer, knowledge producer

Policy impacts expected

Policy impacts expected from the proposed research project are:

1. Strengthened enforcement of the existing non-open burning policy in Thailand.
2. Increased awareness of policy makers on the impacts of RS field burning thus effort can be initiated and communicated among related departments in the target countries.
3. Initiation of policy dialogue from the governmental institutional side with the support of policy briefs produced from the research project activity.
4. Increased awareness of the importance of air quality and climate policy integration particularly in the Mekong agriculture sector.

Outputs

The expected outputs are:

1. Current status of generation and disposal/use of RS in the target countries.
2. Preliminary recommendation on the suitability of RS-derived solid fuel for cooking.
3. Adapted technical design and guidelines for a fuel-cookstove system with preliminary testing results on efficiency and emission.
4. Assessed proposed system in terms of affordability, social-acceptance, and cost-benefit.
5. Air quality-climate co-benefit assessment through the emission reduction of GHGs, SLCPs and toxic air pollutants.
6. Publications: one international joint journal publication and/or international conference presentation, one book chapter for the SUMERNET edited book, policy brief/policy recommendations for rational use and promotion of non-burning practice for local farmers, and brochure for wider public.
7. Workshops/Trainings:
 - Two dissemination national workshops to share the findings: one in Vietnam and one in Cambodia;
 - Two hands-on trainings organized for local farmers (in Cambodia and Vietnam) on operation of cookstove-fuel system;
 - One regional kick-off and methodology development workshop at AIT.

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PROJECT 6

Recovering and valuing wetland agro-ecological systems and local knowledge for water security and community resilience in the Mekong Region (RECOVER)

SUMERNET Theme

This research project principally links to the SUMERNET theme of ECOSYSTEM SERVICES FOR LOCAL DEVELOPMENT.

Abstract

The Mekong Region contains a great diversity of wetland agro-ecological systems that provide a wide range of functions and support important social, economic and cultural values. Economic and social transformations have affected the extent and quality of wetland agro-ecological systems, including due to water infrastructure development and agriculture intensification. The purpose of this research project is to generate knowledge that will enable/improve the process of recovery of wetland agro-ecological (affected by development projects) through Participatory Action Research and pilot projects.

Research questions

The research project addressess the following research questions:

- What indicators can be used to define water security in the context of wetland agro-ecological recovery?
- How are wetland agro-ecosystems valued (bio-physical, economic, social, cultural) through local and scientific knowledge by communities, local government agencies, academics, and other users?
- How have the values (defined by question 2) of wetland agro-ecosystems changed as a result of development and recovery processes from the perspective of communities, local government agencies, academics, and other users?
- How can collaboration between communities, civil society, academics, business, and government agencies be strengthened for wetland agro-ecological system restoration using local knowledge and scientific knowledge (in policy and impact on the ground)?

Objectives

The research project will be undertaken at locations in three countries, namely:

- Rasi Salai and Hua Na Irrigation projects/Wetlands in Rasi Salai and Hua Na Districts, Sisaket Province, Northeastern region of Thailand.
- Floodplain floating rice-vegetable agro-ecological systems in Vinh Phuoc and Luong An Tra communes, Tri Ton district, An Giang province, Vietnam.
- Wetland agro-ecosystem affected by flooding thought to be linked to the operation of the Nam Theun 2 dam in Kang Pa, Phonethan and Salakham villages, Xayboully district, Savannakhet Province, Lao PDR.

From a policy perspective, the research project engages closely with local community, civil society, state, private sector and river basin organization actors, seeking to link local and scientific knowledge in participatory evidence-based decision-making. In the case of Thailand and Vietnam, supportive policies are already emerging for the pilot projects with which our research will engage, whilst in the case of Laos the challenge of river flooding potentially exacerbated by dam operation is an important policy issue to be constructively engaged in. Our research will contribute to scholarship by examining the values of the *recovery* of wetland agro-ecological systems from earlier large-scale development initiatives. We are particularly interested in how concepts of water security can be valued, as understood from the perspective of the range of local actors involved.

The specific purposes are:

1. Design a set of conceptually informed indicators for valuing agro-ecological systems recovery and protection for water security, community resilience, and gender justice to be measured through participatory action research (PAR).
2. Document the value of agro-ecological systems recovery and protection, facilitate local knowledge recovery, and support ongoing wetland agro-ecology pilot projects through a PAR with boundary partner actors.
3. Advance evidence-based policy about the diverse values of recovering agro-ecological systems (economic, social, cultural) to inform analysis of trade-off decisions, especially at the local level, in the context of existing development challenges.
4. Facilitate bridging between scientific and local knowledge in the management and use of wetland agro-ecological systems.
5. Facilitate networks between local organizations, government agencies, academics and others in valuing agro-ecological systems

Methodology

Our research methodology consists of four stages, reflecting the four research questions.

Stage 1: Develop indicators derived from our research project's conceptual framework.

The research project will undertake a literature review. The purpose of the literature review is: a) to map out current state of knowledge of ongoing academic debates that we will engage in; b) to finalize the conceptual framework; and c) derive our wetland agro-ecosystem value indicators from these.

Stage 2: Undertake PAR to identify user values of wetland agro-ecosystems, and contrast against our original conceptual framework.

For each country, focus group discussions and meetings with key informants will be organized to map values of agro-ecological wetland systems. The literature review will be utilized to inform the process design. Selection of participants – all of whom are our identified boundary partners – will account for representativeness in terms of gender, age and relationship to the wetland agro-ecological system. In all three cases, gender is considered in participants selected, methodology, and data disaggregation.

Stage 3: Quantify how user values have changed over time.

Each country case study will research the changes in wetland agro-ecosystem value over time through administering quantitative questionnaires and undertaking indepth interviews. Design of the survey instruments will be according to the outcome of stage 2.

Stage 4: Informing policy agenda.

Building on the process of the PAR during Stage 3, for each country a synthesis policy workshop would be organized:

Thailand: Synthesis of policy recommendations towards on ongoing restoration strategy for the wetland agro-ecological system, and on operation of the Rasi Salai and Hua Na weir.

Vietnam: On agricultural policy towards floating rice-vegetable agroecology, and towards market strategy (eco-tourism, organic trademark).

Laos: Synthesis towards policy recommendations on dam re-operationalization of the water release and improving agriculture in the villages.

Our third inter-country meeting would be held amongst the researchers at this point to synthesize the research findings and policy analysis.

Stage 5: Data management and analysis will be ongoing throughout the research project. The final drafting of peer reviewed journal articles, regional policy brief and SUMERNET book chapter will be produced during the final four months of the project.

Boundary partners

Our boundary partners in Thailand are as follows:

1. Civil society: Khon Taam Association, Taam Moon project, Isan organic agriculture network (formed of community leaders throughout the project affected areas).
2. State agencies: Led by the Royal Irrigation Department (Sisaket Irrigation Project, Office of Sisaket Forestry, Office of Sisaket Fishery, Office of Sisaket Livestock).
3. River Basin Organization: Lower Moon River Basin Organization.

Through these boundary partners, we anticipate that more than 500 impacted villages located within the Rasi Salai wetlands will be beneficiaries.

Our boundary partners in Vietnam are as follows:

1. Local community groups: 30 households farming 100 ha land in two communes.
2. State agencies: Vinh Phuoc and Luong An Tra People's committee (commune), Tri Ton district people's committee, Farmers and Women's associations at two communes, and district.
3. Private sector: Rice producers and business, tourist companies.

Through these boundary partners, we anticipate that the concept of floating rice agro-ecology can be promoted in 141 communes in An Giang province and 140 communes in Dong Thap province.

Our boundary partners in Laos are as follows:

1. The Provincial Agriculture and Forestry office (PAFO) and District Agriculture and Forestry office (DAFO).
2. Representatives of farmers groups, consisting of 235 households farming 235 hectares of land from Kang Pa, Phonethan and Salakham villages, Xaybouly district, Savannakhet province.
3. Representative of the Nam Theun 2 Power Company (NTPC).

Policy impacts expected

Overall, at the local level, we anticipate our research will inform and help shape the formation and implement of local policy, planning and practices that link together the diverse values of wetland agro-ecological system recovery with livelihood resilience and water security. With recognition of these values, trade-offs against other policy options (for example, investments in large water storage infrastructure) can be made. Through PAR, we also aim for the empowerment of local community to engage in these processes.

Meanwhile, at the provincial level, relevant government agencies will work more closely with civil society in valuing agro-ecosystem and values of wetland recovery that support local livelihoods and maintain ecological services.

Outputs

The following written materials as tangible outputs will be produced.

- Three local language policy briefs (Thailand; Vietnam; Laos) will be produced documenting the PAR outcomes and recommendations for distribution at the local, sub-national and national levels.
- We will produce one book chapter for the SUMERNET edited book, tentatively titled “Recovering wetlands, Recovering Local Knowledge: Participation Action Research for Local Livelihoods Resilience and Community Empowerment in Thailand, Vietnam and Lao PDR”
- We will also produce two peer-reviewed papers for international journals that synthesize the findings; target journals are Ecology and Society journal and Ambio journal.

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PROJECT 7

Impacts of the east-west economic corridor on local livelihoods and forest resources in the Mekong River region: Case studies of selected forest-dependent villages in Vietnam, Lao PDR and Myanmar (EWEC-FC)

SUMERNET Theme

This research project addresses the theme of SUSTAINABLE REGIONAL ECONOMIC INTEGRATION.

Introduction

The East–West Economic Corridor (EWEC) is an economic development program initiated in 1998 by the Ministerial Conference of Greater Mekong Sub-region organized in Manila, the Philippines. It aims to promote development and economic integration of the four ASEAN countries: Myanmar, Thailand, Lao PDR and Vietnam. EWEC created the first transportation corridor – operational since 2006 – running the entire width of mainland Southeast Asia with a distance of 1,450 kilometres.

The EWEC contains many forest-dependent villages, about 37% of the total area in Quang Tri province, Vietnam; about 34% of Kyaikmaraw in Myanmar and about 45% of total areas in Savannakhet province in Laos, with a significant number of people living below the poverty line. A large proportion of the people in these villages are largely dependent on subsistence agricultural production, cattle raising and access to forest for wood and non-timber forest product collection. There are only a few households involved in small services and cash crop cultivation.

The establishment of the East-West Economic Corridor has brought some kinds of benefits to some regions and stakeholders. These include employment in services such as hotels and guesthouses, increase in trade and investment, tourism and agriculture. However, other stakeholders such as disadvantaged communities or those dependent on natural resources for their livelihoods have been affected. More importantly, the EWEC activities have resulted in putting more pressure on the forest resources due to the rapid clearing of forests for the expansion of intensive cultivation of cash crops, illegal logging, and infrastructure development.

Our review of the current literature on EWEC shows that while statistical information is available to show economic development such as aggregate trade and

investment, number of factories being established, tourists and cross-border movements, etc. But there is also an absence of information on the impacts of EWEC in particular on local livelihoods and on other social and environmental issues; this research project aims to fill that gap.

Research questions

- What are the impacts of the EWEC on the local livelihoods of forest-dependent communities, particularly vulnerable groups?
- How have local livelihoods of forest-dependent communities been changed under the above impacts of the EWEC?
- What are the impacts of the EWEC on forest resources in terms of access to forest resources and its management by local communities?
- What are the key factors influencing the changes in local livelihoods of forest-dependent communities, particularly women and ethnic minority groups, and for forest management?

Objectives

The objectives of this collaborative project are to provide policy makers and decision-makers with information about the larger implications of regional economic integration projects like the EWEC. The research project has these following objectives:

- To investigate the impacts of East-West Economic Corridor (EWEC) on the livelihoods of forest-dependent communities, particularly for vulnerable groups, such as the poor households, ethnic minority groups and women.
- To investigate the impacts of East-West Economic Corridor development on forest resource along the EWEC areas.
- To acquire valuable insights into the changes in local livelihoods of forest-dependent communities and in access to forest resources under the impacts of EWEC.
- To provide an analysis of the policy-level implications of regional integration efforts, and how to address these changes and impacts towards the improvement of the local livelihoods of forest-dependent communities and forest management.

Methodology

There is a wide range of research methods to evaluate the impacts of regional economic integration projects like the East-West Economic Corridor. However, none of these research methods are exclusive to any single category or study

purpose. The adoption of specific research methods is determined by the study objectives, resource availability and vision of the researchers.

For this study, in order to evaluate the impacts of EWEC on local livelihoods, the Double Different and Matching method (i.e. Difference in Difference method) will be used for analysis based on the sustainable livelihood framework. We will be comparing indicators reflecting the local livelihoods and forest resources in “Before” and “After” and “With” and “Without” the operation of EWEC.

Using “Before” and “After” method, the study will measure the changes in the same indicators at the beginning of the corridor implementation and after. However, the changes in the indicators may not reflect the actual contribution or impact of the corridor as these changes may also be affected by other forces. Hence the study also adopts the “With” and “Without” method to measure the changes in the indicators in terms of local livelihoods, forest resources and forest management. The impacts of EWEC will be measured by the changes in the value of indicators under the scenarios of both “With” and “Without” the economic corridor.

Using the “Difference in Difference” method, this study will combine both qualitative and quantitative research methods to evaluate the impacts of EWEC on both local livelihoods and forest management. In addition, literature review, secondary data, and survey-based approach, Pre and Post Case studies, and most significant change stories will be applied to collect further data for a complete evaluation of the impacts of EWEC.

Boundary partners

The first boundary partners are the policy implementer and influencer at provincial and district level, including the provinces, district peoples committee, local forest management board, and local department of planning and investment, commerce agriculture and rural development.

The second boundary partners are the central government decision and policy makers in Vietnam, Laos and Myanmar, such as the Ministry of Planning and Investment; Ministry of Natural Resources and Environment, Ministry of Agriculture and Rural Development and also the national agencies related to forest development and protection, and the regional development bank such as the Asian Development Bank.

The third boundary partners are the academic institutions in Vietnam, Laos and Myanmar, including Hue College of Economics, Laos Economic Research Institute and Asia Development Research Institute in Myanmar.

Fourth boundary partners are forest dependent communities, who are facing the impacts of the EWEC. They are invited to participate in this study as informants

to investigate the impacts of the EWEC on their livelihood strategies and how their livelihoods have changed under EWEC.

Policy impacts expected

The study aims to show to policymakers that the economic corridor and regional economic integration efforts can have a wide range of impacts on both local livelihoods and forest resources.

The findings will create a better understanding of the impacts of EWEC on local livelihoods to better influence national policy debates and policy formulation about how to implement regional integration efforts. The policy makers can expand their understanding of the EWEC's impacts on local livelihoods particularly for disadvantaged groups such as those living in the border areas, ethnic minority groups and women.

Outputs

1. Comprehensive report on the investigation of EWEC and its impacts on local livelihoods of forest-dependent communities in Vietnam, Laos and Myanmar.
2. Reports of the EWEC's impact on forest resources in Vietnam, Laos and Myanmar.
3. Case study reviews and most significant change stories in correlation between EWEC and its impacts on local livelihoods and forest management.
4. 2 peer-reviewed papers: Cross-country papers investigating the impacts of EWEC on local livelihoods of forest dependent villages and forest resources in along EWEC areas in Vietnam, Laos and Myanmar.
5. 1 paper/country team to disseminate findings of research project on the impacts of EWEC on local livelihoods of forest dependent villages and forest resources in Vietnam, Laos and Myanmar,
6. 3 policy briefs (1 policy brief/country) developed and disseminated to relevant boundary partners. There will be one (01) policy brief on cross country issues regarding the impact of EWEC on local livelihoods and forest management.
7. Workshops: There will be three workshops (one workshop/country team) organize in each country with participants from provincial government, district government and villagers in order to refine, and disseminate the findings.
8. Participation in international and domestic workshops in order to present the findings and policy implication of study.

9. Press release: There will be three press releases (one/country) through public media channels to disseminate findings and policy implication of study in country.
10. Two master students and three mid-career researchers are enhanced their capacity to conduct their research on the EWEC and sustainable GMS economic regionalization.
11. One book chapter to be developed and published in the SUMERNET edited book.

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This booklet provides summary profiles of the **seven research projects** that will be undertaken in SUMERNET Phase 3. These profiles are based on the full project proposals that were submitted by the project partners to SUMERNET.

In March 2014, SUMERNET called for and approved concept notes for research projects. Then about ten shortlisted concept notes were invited to submit full proposals. In December 2014, a total of seven research projects were selected for receiving the research grants funded by the Swedish International Development Cooperation Agency (Sida) and Lower Mekong Public Policy Initiative (LMPPi).

The research grants are being provided to a consortium of research institutes, universities, non-governmental and civil society organizations. The minimum requirement is that at least two organizations, from at least two different countries within the Mekong Region, participate in each research project. Projects will be for the duration of about 20 months.

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