



EEPSEA Climate Change Adaptation Conference

Bali, February 13-15, 2008



Synthesis of Proceedings

Economy and Environment Program for Southeast Asia

**CLIMATE CHANGE: IMPACTS,
ADAPTATION, AND POLICY
RESPONSES IN SOUTH EAST ASIA**

SYNTHESIS OF PROCEEDINGS

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INTRODUCTION

The Economy and Environment Program for Southeast Asia (EEPSEA) organised a conference on climate change adaptation in Bali, Indonesia from 13 to 15 February, 2008. The event brought together key players in the subject-area by way of 65 participants comprising researchers, policy-makers, NGOs and donors. Plenary speakers presented how climate change would affect Southeast Asia based on the analysis of the Intergovernmental Panel on Climate Change (IPCC) and what economic analysis could offer to adaptation studies. About 40 papers were presented in the workshop sessions while national and local government policy-makers and project managers presented existing work on climate change adaptation by way of panel presentations. The main aim of the conference was to determine critical areas of research to support climate change adaptation strategies in Southeast Asia. The participants formed an extremely diverse group, including practitioners and scientists from a wide range of natural and social sciences and from countries with very different income levels and ecosystems. In spite of this, and the preconception that little or no research or planning has been done on climate change adaptation, communication was surprisingly easy. There is considerable familiarity with the basic science of climate change and with the vocabulary and conceptual frameworks being developed to analyse adaptation. For example, the concept of risk as a function of hazard, exposure and vulnerability was frequently employed and used to identify research gaps. This common vocabulary allowed workshop participants to move quickly from basic facts and concepts towards a research agenda. This report contains the syntheses of the various presentations and group discussions, and provides a summary table on future research areas identified in the conference.

A. SYNTHESSES OF PAPERS PRESENTED

1. SESSION A: CLIMATE CHANGE AND AGRICULTURE

There were 12 papers presented in this session, covering the various impacts of climate change on agriculture and the corresponding adaptation measures. The papers fell into two categories: research by natural scientists using modeling to predict the physical impacts of climate change, and those by social scientists which made use of survey and participatory data collection tools to generate qualitative accounts of farmers' adaptation strategies to cope with changing climates.

The major finding of the bio-physical climate change models was that changes in temperature, water availability, and other environmental factors caused by climate change generally led to a reduction in productivity. While there were positive effects reported in some areas, the net impact was mainly one of loss in production.

The socio-economic studies, on the other hand, showed the differential impacts of climate change on the various socio-economic groups, depending on the location of settlement and production sites, income and education levels, and the information the people had on the threats from climate change. In general, the impacts on farm households with livestock and other non-farm sources of income were less than on households relying purely on income from a single crop.

Planned adaptive strategies discussed were classified into two distinct groups; "top-down" and "process-oriented". The 'top-down' adaptive strategies included the use of climate prediction technology, agro-ecological maps as guidelines for sustainable agriculture development, and infrastructure. The 'process-type' of adaptation aimed at providing knowledge to farmers to help them develop early warning systems, water conservation systems, and disaster management strategies to prepare them for adverse climate events. Autonomous adaptation measures

included changes in farming practices and calendars, changes in choice of varieties and crops grown, and diversifying income sources.

In terms of research gaps, there was a consensus on the need to 'downscale' modeling studies to cover smaller geographical zones. In addition, impacts needed to be translated to socio-economic impacts in monetary terms. It was also acknowledged that social research should not only collect qualitative information on climate change impacts and adaptation strategies but seek quantitative data as well.

2. SESSION B: ENHANCING ADAPTIVE CAPACITY AND RISK MANAGEMENT

There were 13 papers presented in this session, comprising four case studies, two action research (i.e., in collaboration with the surveyed communities), four conceptual papers, and three reviews of past studies on climate change. The papers focused on: a) climate change and natural hazards including vulnerability and impact assessments; b) adaptation measures and adaptive capacity, and c) risk management.

The presentations showed how different countries faced different types of natural hazards. The Philippines, Indonesia and Vietnam were subject to frequent cyclones, flooding, storm surges, droughts and forest fires while Lao-PDR, Cambodia, and Thailand faced mainly droughts and floods.

Adaptation measures were often based on local experiences and perceptions. They included the construction of houses in elevated areas or with high foundations to avoid flood waters, adjustment of production activities, changes in crop choices, reinforcing existing house structures, moving to safer places, putting up sandbags along the shoreline, storing or sharing food, changes in livelihood options, and temporary migration. Despite these efforts, the conclusion was that the capacity to adapt to climate change/variability of local communities was still very limited. At the national level, this capacity is likewise far from adequate.

Some of the researchers recommended building the ability of communities and local governments to predict and monitor climate change impacts. Two case studies in Vietnam and the Philippines proposed mainstreaming adaptation and risk management strategies into community development plans and promoting community and multi-stakeholder participation as a way to manage the risks arising from climate change.

In terms of research gaps, there was a consensus that there was very limited research on vulnerability and adaptation to climate change in the region. Namely, the assessment and valuation of impacts in agriculture, forestry, fishery, health, and biodiversity at the national and local levels, and the economic analysis (CBA, CEA) of adaptive measures were seriously lacking. While coastal zones were recognized as the most vulnerable areas, the need to map the groups most at risk was acknowledged. As in Session A, the need to downscale existing models used to predict rainfall and temperatures such as PRECIS and MAGICC-SCENGEN to national and local levels was recognized.

3. SESSION C: ADAPTATION TO SEA LEVEL RISE AND CLIMATE CHANGE MITIGATION

There were two sets of papers presented in this session: (1) papers on the impacts of and adaptation to sea level rise, and (2) papers on mitigation in the forestry and energy sectors in Indonesia. The first set of papers was dominated by contributions from Vietnam, a reflection of the huge threat faced by this country from sea level rise.

PAPERS ON ADAPTATION TO SEA LEVEL RISE

It was reported that sea level rise (SLR) would partially or totally displace some coastal villages in many parts of the world within the next century. The economic losses will include loss of infrastructure, settlements, and livelihoods as well as a reduction in the quality of life due to health-

related impacts. Several papers documented the nature of these impacts with a few providing monetary estimates on the losses incurred in some coastal communities already experiencing flooding. There was, however, limited scientific basis for the attribution of the impacts to climate change in many of the studies. This weak link can be strengthened by future joint research between social and natural scientists. Another research gap was that some areas impacted by climate change were neglected. For instance, the impacts of sea level rise on tourism and biodiversity were not discussed in any of the papers. Since tourism is an important economic activity in countries like Thailand and Indonesia, it warrants research attention.

The studies from Vietnam showed that local communities had developed flood-based farming systems which provided them with new sources of income and daily sustenance. Others were able to benefit even more by investing in fishery (aquaculture and fishing). Protective measures like building dykes and using sand bags were employed in several cases. Most of the papers did recognize the need to further study the adaptation practices of communities at various levels. There was also an expressed need to do more work on the costs and benefits of adaptation measures, and the potential roles of the market and private sector in adaptation. Finally, cross-country research was recommended to generate information to support regional (ASEAN) policy-making.

MITIGATION IN THE ENERGY AND FORESTRY SECTORS IN INDONESIA

There were five papers in this set; two on forestry and three on energy. The forestry papers highlighted the strong awareness of the Indonesian government on the role of deforestation in climate change, particularly after the recent COP of the UNFCCC meeting in Bali. It was reported that the government was now working on policies to rehabilitate degraded forests and address illegal logging as part of its REDDI (Reducing Emissions from Deforestation and Degradation in Indonesia) strategy.

Such mitigation efforts need to be linked to adaptation through options for sustainable livelihoods, market provisions for non-timber forest products, and payment for environmental services, among others.

The papers on mitigation in the energy sector discussed the roles of the electricity and manufacturing sectors with high levels of CO² emissions and how economic instruments could be used to bring about a decrease in these emissions. A carbon tax was shown to be effective in reducing emissions as well as enhancing welfare, provided the tax revenue was used appropriately.

There was general agreement that an equal emphasis on deforestation and reducing fossil fuel consumption by the energy sector was required to mitigate climate change. This became apparent in the light of studies showing that energy sector's contribution to CO² emissions will eventually overtake that of the forestry sector. Finally, it was concluded that the challenge for Indonesia was to find ways on how to pursue a low-carbon economic development policy – research on this was obviously required.

B. SYNTHESIS OF PANEL PRESENTATIONS: WHAT NATIONAL AND LOCAL GOVERNMENTS AND NON-GOVERNMENT ORGANIZATIONS ARE DOING ON CLIMATE CHANGE ADAPTATION

Representatives from the environment ministries of Indonesia, Cambodia and Lao-PDR gave an overview of what their governments' programs on Climate Change Adaptation were. The hosting by Indonesia of the 2007 COP meeting of the UNFCCC in December 2007 brought climate change to the forefront of national planning – this support from top level government is expected to boost mitigation and adaptation efforts in the country. Indonesia has already developed a National Action Plan that is focused on adaptation, but which also contains guidance on technology,

financing, and capacity building to support adaptation as well as mitigation efforts. As for Lao-PDR and Cambodia, both have developed their National Adaptation Programme of Action (NAPA) with support from the LDCF funds of UNFCCC. The planning relied heavily on multi-sector consultations and some research studies, with each country having more than 30 adaptation projects in their NAPAs. The challenge now was how to mobilize international funding to support these adaptation projects as national funding was largely non-existent.

The panelists from the local governments consisted of representatives from an urban city (Bangkok, Thailand), a rural community (Albay, Philippines), and a non-government initiative in a local village (Hue, Vietnam). Both the local governments of Bangkok and Albay launched their programs on climate change only last year, but in a big way. Bangkok had the 'Bangkok Declaration on the Cooperation to Alleviate Global Warming' signed on 9 May 2007 while Albay came up with an 'Albay Agenda on Climate Change.' Both initiatives received national attention and were done in collaboration with a number of international partners. For Bangkok, the partners were World Bank and UNEP while Albay's was the World Agroforestry Research. Meanwhile, the governor of Albay was working hard to make the Albay model a national one by coordinating with the League of Mayors in the Philippines.

While the national and local governments have only recently begun responding to the climate change challenge, such efforts started three years ago in selected villages in Hue, Vietnam with the assistance of a non-government organization from Canada. The local villages were assisted to develop 'safer village plans' through capacity-building efforts in climate change adaptation. The experience of these villages shows that local communities can be effectively engaged in planning for climate change adaptation, particularly if such initiatives are made as part of disaster management planning and preparation.

C. KEY POINTS FROM THE PLENARY AND BREAK-UP GROUP DISCUSSIONS

1. WHAT CLIMATE CHANGE ADAPTATION RESEARCH SHOULD ADDRESS

The answers to what Climate Change Adaptation (CCA) research should address reflect a shared vision of what a good CCA research should be. This vision has three key elements: *focus, scope, and approach*:

Focus: Research has to target vulnerable poor communities/sectors and respond to the needs of the users of the research information (policy-makers, vulnerable communities, donors, and civil society). It should generate findings that not only add knowledge, but also lead to concrete action to improve the adaptive capacity, vulnerability, and livelihoods of the affected communities. Research should further support decision-makers in evaluating adaptation options using economic considerations.

Scope: A good research study on climate change adaptation should consider the issue in relation to the Millennium Development Goals and national development goals such as sustainable development and poverty alleviation. It should also consider the cross-sectoral impacts of climate change and adaptation interventions as well as assess the sustainability of such interventions. Finally, such research should not be limited to the evaluation of adaptation options, but should also consider implementation issues like transparency, particularly in the case of planned community adaptation.

Approach: The research should be science-based, adopting an interdisciplinary approach to allow for comprehensive analysis.

Table 1. The Attributes of a Good Climate Change Adaptation Research Study

Given by Participants	Summarized as:
1. Relevant to what the government needs in terms of data & information	POLICY-RELEVANT
2. Addresses the needs of vulnerable communities and sectors	PRO-VULNERABLE GROUPS
3. Contributes to enhancing livelihood	WELFARE-ENHANCING
4. Generates results that can influence behaviour and has well-defined users of information	USER-SENSITIVE AND USER-FOCUSED
5. Leads to specific plan of action	ACTION-ORIENTED
6. Leads to identification of cost-effective/efficient adaptation options	ENABLES ECONOMIC ASSESSMENT OF OPTIONS
7. Contributes new knowledge/information	KNOWLEDGE-ENHANCING
8. Considers how adaptation is linked to other macroeconomic/national goals or indicators	EXPLORES CROSS-SECTORAL LINKAGES
9. Is objective and science-based	SCIENTIFIC
10. Promotes inter-disciplinary approach	COMPREHENSIVE
11. Considers regional context and promotes regional/international collaboration	REGION-WIDE; ALLOWS KNOWLEDGE SHARING &/OR UPSCALING
12. Is responsive to donors' priorities	DONOR-SENSITIVE

Table 1 (continued).

Given by Participants	Summarized as:
13. Assesses sustainability of adaptation interventions (beyond project support)	SUSTAINABLE; FORWARD-LOOKING
14. Contributes to ensuring transparency in the implementation of adaptation programs	PROMOTES TRANSPARENCY
15. Adapts the IPCC framework for analyzing impacts, vulnerability and risks	BUILDS ON EXISTING FRAMEWORK OF ANALYSIS
16. Clearly defines the scale of analysis	WELL-DEFINED BOUNDARY/SCOPE
17. Assesses 'replicability' of adaptation options	WIDE APPLICABILITY OF SOLUTIONS
18. Develops capacity of local government	CAPACITY-BUILDING
19. Incorporates ethical considerations	ETHICS-BASED

2. RESEARCH QUESTIONS/AGENDA

Seven areas for climate change adaptation (CCA) research were identified based on an analysis of the results of the workshop and plenary discussions. Tables 2 and 3 at the end summarize the key research questions, knowledge gaps, potential research projects, priority study sites, and criteria for choice of study sites.

a) Identification & Characterization of the Vulnerable Communities & Sectors

- Who are the vulnerable communities and sectors?
- What makes them vulnerable?
- What is their current level of adaptive capacity?

- How can the adaptive capacity of poor households and communities in the most vulnerable sectors (e.g. agriculture) be enhanced?

b) *Multi-dimensional Analysis of Adaptation Practices in Southeast Asia*

There are various dimensions to the analysis of adaptation practices at both household and community levels. These *spatial, temporal, and depth* dimensions must be taken into consideration in identifying appropriate planned adaptation initiatives. The spatial analysis considers what adaptation practices are in place, given the types and levels/scales of adaptation. The time dimensions of adaptation include past and present (socio-economic, political and institutional) circumstances as well as projections about future changes. Finally, the analysis of past adaptation experiences should explore the processes and rates of adaptation and assess the sustainability of adaptation options.

i) Spatial: Type & Scale

- Type 1: Accommodation, protection and retreat
Type 2: Structural and non-structural
Type 3: autonomous vs. planned vs. bundled
- Scale: household, community, provincial, national, regional (SEA)

ii) Temporal

- Dynamics
 - Future scenarios should consider the changes in climate events as well as the possible changes in social and economic structures.
 - Past experiences and indigenous knowledge on adaptation could serve as bases for learning, but it should be

recognized that future events may be outside the 'experience domain' of the current generation.

■ **Sustainability**

- How can we sustain adaptation technologies or interventions in community life beyond the life of the research project?

■ **Process and Rate of Adaptation**

- Understanding how and over how much time adaptation strategies have evolved and spread.
- Assessing if spatial movements (e.g. migration, inland movement) as adaptation strategies have taken place among vulnerable communities.

iii) **Depth of Analysis** (Going beyond descriptive accounts of what adaptation practices exist at household and community levels):

- Assessment of existing adaptation practices relative to: adaptation needs, current levels of adaptive capacity, and practices advocated by science and indigenous knowledge systems.
- Understanding the barriers to adaptation and analyzing the determinants of adaptation

c) *The Economics of Adaptation Interventions*

Research that provides critical information to decision-makers on the costs and benefits of adaptation options is very much needed, particularly as adaptation funds are extremely limited and adaptation projects have to compete with other government projects.

As decisions to adapt are made at the private/household level as well as the societal (community/government) level, both financial and economic analyses must be made. Besides these, aspects relating to

the distribution of impacts, such as equity and share of the costs and benefits, must also be looked into.

- Cost benefit/cost-efficiency analyses of various types of adaptation practices/technologies on various scales.
- Distributional impacts of adaptation interventions (cost-benefits for different sectors/stakeholders)
 - Cost sharing of adaptation interventions

d) *Methodological Issues Affecting Economic Analysis of Climate Change Impacts and Adaptation Interventions*

The economics of climate change and adaptation have been made complicated by the long time-scales and wide geographical-scales involved. These factors make it difficult to attribute observed or predicted changes to climate change as caused by global warming. This has implications for the skills of researchers tackling economic analyses in this subject-area.

- How to isolate the impacts of climate change from climate variability and other compounding factors in the social, economic, and policy environment.
- Scaling up or generalization of case study results to national levels.
- What baseline should be used in measuring the impacts of climate change and adaptation interventions?

e) *Downscaling and Scope-scaling Methods/Models Used in Climate Change Analysis*

Modeling in climate change research to date faces two main constraints: the models work mostly on large scales (regional or national) and are largely limited to quantitative physical impacts on

selected crops. The challenge is to bring the analysis down to a level that is relevant to local decision-makers and to expand the scope to monetary impacts beyond crop production levels.

- Downscaling regional models to measure the impacts of climate change and adaptation interventions.
- Scope-scaling: Climate models usually predict the physical impacts of climate change on specific crops or sets of crops. There is a need to extend the scope to include socio-economic impacts at the household level, measured in economic terms.

f) Better Understanding and Communicating of Research Findings

One of the main aims of a CC research activity should be to find ways to communicate climate change research findings more effectively to policy-makers, communities, civil society, other scientists, and other concerned groups. This could encompass an analysis of current levels of knowledge of communication strategies, forms and modes of communication used, the types of information being communicated, and other relevant factors.

Communicating with policy-makers

- How is priority setting in the climate change agenda decided upon at various levels of government?
- How are government decisions affected by the type and form of information provided to policy-makers?
- What is the best form of communicating research findings to policy-makers?
- How can one address the mismatch between the 'short-term planning horizon' of politicians and the long-term consequences/impacts of climate change?

Communicating with Communities and Civil Society

- How is climate change understood by local communities/civil society?
- Do local communities/civil society have a concrete idea of how humans contribute to climate change?
- What are their perceptions on how people can mitigate and adapt to climate change?
- What information do they need to help them make informed adaptation decisions?
- What form and mode of information dissemination/delivery do they find most effective in influencing their decisions?

g) Private-sector Involvement in Adaptation

- What are the opportunities for private sector/civil society involvement in climate change adaptation efforts?
- Are there success/failure stories of private sector/civil society participation in climate change adaptation efforts?
- What factors will influence the private sector's decision to engage in the provision of services/technologies for adaptation to climate change?
- What are the financial returns from investment in the provision of services/technologies for adaptation to climate change?
- What is the difference between the private sector's and government sector's provision of adaptation services/technologies?

3. NON-RESEARCH CONCERNS

The workshop participants also raised concerns on how to establish and maintain a closer dialogue between researchers and policy-makers, and among researchers (namely, natural and social scientists) through

networking activities. They further pointed out the need to explore potential sources of financing for adaptation interventions in the region.

a) Enhancing Research-Policy Linkage

- Involve policy-makers at relevant levels in the research process from the start to ensure their 'buy in'.
- Translate research findings to socio-economic terms as these are what matter to policy makers. Use 'creative communication'.
- Explore how to communicate recommendations to extension workers as they would have longer-standing commitment to match the long-term nature of climate change.
- Link with climate change focal persons in the various countries.

b) Enhancing Networking in the Region

- Increase collaboration among researchers in the region through joint research.
- Encourage research that will enhance South-South collaboration on climate change adaptation
- Explore South-South exchanges for capacity-building
- E-information sharing (websites, etc.)

c) Financing Adaptation Interventions

There is a need to help national governments and local communities access adaptation funds from international platforms such as the UNFCCC, Kyoto Protocol, and other bilateral, multilateral, and NGO adaptation funding sources. This could entail assisting them in finding information on where and what funds are available, preparing proposals on how to access these funds, and building their capacity in how to manage these

funds to ensure that maximum benefit is achieved. Exploring ways on how communities can share the burden of adaptation funding, through cash and non-cash contributions, should also be looked into.

Table 2. Key Research Questions for and Knowledge Gaps in Southeast Asia

Research Questions	Indicator of Knowledge Gap
Where are the vulnerable areas and what are good vulnerability indicators?	3.5
Who should adapt to CC?	1.7
How should the costs of adaptation be distributed?	3.5
Which adaptive options are cost efficient?	2.3
What is the impact of adaptation on other development goals, e.g. poverty alleviation?	1.7
How should the adaptive capacity of vulnerable groups and their knowledge bases on adaptation be improved?	2.0
What are the best adaptation strategies and options?	1.5
How do vulnerable groups make decisions and take action in adapting to climate change?	1.5
How do current policies and regulations influence autonomous adaptation at the household level?	1.6
What are the economic costs of adapting to sea level rise?	1.1

Table 2 (continued).

Research Questions	Indicator of Knowledge Gap
What are the relevant government policies to enhance adaptation capacity?	2.7
How should the socioeconomic scenario be incorporated into analyses of adaptation impacts?	2.0
What are the roles of the private/business sector in adaptation strategies?	1.8
Who/What and where are the most vulnerable people/sectors?	3.8
What are the adaptation needs of vulnerable groups?	3.8
What are the negative and positive impacts of adaptation?	2.8
How should the communication of climate change to relevant sectors be improved?	2.2
What methods should be used to evaluate adaptation options?	2.7
How should adaptation be financed?	2.5
How can adaptation be made sustainable?	2.0
How do people perceive risks related to climate change?	3.3

Notes:

1. CCA= Climate Change Adaptation
2. The “Knowledge Gap” Indicator is in reference to a scale of 1 to 7 with 1 = very low level of knowledge and 7 = very high level of knowledge.

Table 3. Potential Research Projects, Priority Study Sites, & Criteria for Choice of Study Sites

Potential Research Projects	Priority Study Sites	Criteria for Choice of Study Sites
Climate change impacts on and adaptation of local communities	Albay, Samar, Batanes (Philippines); Ningxia (China); Hue, Nam Dinh (Vietnam); coastal areas in Thailand; agricultural sector in Central Thailand; Tonle Sap (Cambodia)	Vulnerability to climate change due to geographic location and poverty, limited information, and poor support from the national government.
Cost-benefit analysis of adaptation options	Vulnerable areas in the region	Needed by decision makers
Downscaling methodologies to assess climate change impacts, vulnerabilities, adaptation and risks	Regional	Needed by local decision makers
Region-wide analysis of impact of CCA in relation to development goals	ASEAN countries; ASEAN as a region	Regional concerns
Good Governance: Strengthening community institutions in CCA	Jakarta, eastern rural Java, Balikpapan Bay; Vietnam: Mekong RD; Phil: Isabela, Bohol	Capacity building is needed
Building the adaptive capacity of small farmers in major rice producing countries in SEA	Drought and flood-prone areas, rainfed areas in SEA	Vulnerable rice producing areas

Table 3 (continued).

Potential Research Projects	Priority Study Sites	Criteria for Choice of Study Sites
Cost of adapting to sea level rise in Southeast Asia	Mekong Delta (Vietnam); Kakong, Kampot, Sihanoukville (Cambodia); Jakarta (Indonesia); Samutprakan (Thailand); Legaspi, Cebu (Philippines)	Sea level rise hotspots; poor areas; vulnerable sites based on NAPA
The adaptation process in the context of dynamic urban-rural linkages in Southeast Asia	Jakarta, Bogor, and Tangra (Indonesia); Red River Delta (Vietnam); Tonle Sap (Cambodia); Region IV and NCR (Philippines)	Secondary cities; potential for in-and out-migration; multiple land use and livelihood portfolio.
The role of the private sector in providing insurance for adaptation	Regional	Importance to the region
Enhancing 3-way communication of adaptation knowledge	Regional	Importance to the region

Table 3 (continued).

Potential Research Projects	Priority Study Sites	Criteria for Choice of Study Sites
Enhancing the adaptation of communities in CC-stressed areas	Albay, Samar, Batanes (Philippines); Ningxia (China); Hue, Nam Dinh (Vietnam); coastal areas in Thailand; agricultural sector in Central Thailand; Tonle Sap (Cambodia)	Frequency of floods, intensity of droughts, fragile ecosystems
Impacts of climate change on health	Vulnerable sectors in the region	Low awareness of the health risks/impacts
Communication of CC risks 1) Scientists - policy-makers dialogue 2) Scientists - community dialogue	Jakarta, eastern rural Java, Balikpapan Bay ; Phil: Isabela; Mekong RD; NE Peninsula Malaysia	Representativeness
Tools development (scientific, indicators, cost effective, user-friendly)	Mekong RD, NE Thailand; Jakarta, eastern rural Java, Balikpapan Bay; Lao PDR: Nam Khaning; Phil: Isabela	Existing projects/previous studies

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