



CLIMATE RISKS, REGIONAL INTEGRATION, AND SUSTAINABILITY IN THE MEKONG REGION

edited by

Louis Lebel, Chu Thai Hoanh,
Chayanis Krittasudthacheewa, and Rajesh Daniel

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Contents

<i>Abbreviations</i>	viii
<i>Acknowledgements</i>	x
<i>Foreword by Eric Kemp-Benedict</i>	xi
1. Introduction: Pursuing Sustainability in the Mekong Region <i>Chayanis Krittasudthacheewa, Louis Lebel, and Chu Thai Hoanh</i>	1
I. Policy Think Pieces	
2. Energy, Economy, and Climate Change in the Mekong Region <i>Lailai Li and Tatirose Vijitpan</i>	9
3. Valuing Ecosystem Services in the Mekong Region <i>Penporn Janekarnkij and Orn-uma Polpanich</i>	29
4. Transboundary Flows of Resources, People, Goods, and Services in the Mekong Region <i>Louis Lebel, Sopon Naruchaikusol, and Muangpong Juntopas</i>	54
5. Urbanization and Sustainable Development in the Mekong Region <i>Carl Middleton and Dusita Krawanchid</i>	72
II. Cross-border Collaborative Research	
6. Vulnerability of Livelihoods in Flood-prone Areas along the Cambodia–Vietnam Border <i>Nguyen Duy Can, Seak Sophat, Vo Hong Tu, Sok Khom, and Chu Thai Hoanh</i>	97

7. Increasing the Benefits from Contract Farming to Rural Households in the Mekong Region: Insights from Studies of Rice and Sugar 123
Saykham Voladet, Yanyong Inmuong, Aung Win Htut, Winston Set Aung, Men Prachvuthy, Louis Lebel, Graham Eagleton, Pippa J. Featherston, and Angela L. Bush
8. Quantifying Carbon Emissions Derived from China's Investment and Trade in the Lower Mekong Countries 146
Hu Tao and Cao Chunmiao
9. Transboundary Fish Trade in the Lower Mekong Basin: Impacts on Fisheries and Rural Employment in Cambodia, Lao PDR and Thailand 165
Raphael Glemet, Eleanor Elbert, Hap Navy, and Douangkham Singhanouvong
10. Communicating Water-related Climate Change Risks: Lessons from a Multi-tool and Multi-country Study in the Mekong Region 183
Ngo Cong Chinh, Yvette Clarke, Nguyen Hung Manh, Louis Lebel, Sakaradhorn Boontaveeyuwat, Seak Sophat, Bach Tan Sinh, and Nguyen Tri Khiem
11. Climate Change Impacts on Food Security and Livelihoods: Case Studies from Lao PDR and the Philippines 201
Linda M. Peñalba, Dulce D. Elazegui, Outhai Soukkhy, Mayo Grace C. Amit, Felino P. Lansigan, and Francis John F. Faderogao
12. The Impact of Urbanization on the Hinterlands: Perceptions of Households in the Hinterlands of Khon Kaen, Thailand, and Vang Vieng, Lao PDR 228
Maniemai Thongyou, Bounthavy Sosamphanh, Thanapauge Chamaratana, Monchai Phongsiri, and Louis Lebel

13. Greenhouse Gas Emissions from Tourism Service Providers in Chiang Mai, Thailand, and Hue, Vietnam	248
<i>Sivannapan Kumar, Kyoko Kusakabe, Pravakar Pradhan, Pujan Shrestha, Srujana Goteti, Tran Anh Tuan, Ekawit Meteejaroenwong, Trinnawat Suwanprik, and Khanh Linh</i>	
14. Evaluation of the Impact of Pilot Payments for Forest Environmental Services (PFES) in Lam Dong Province, Vietnam	270
<i>Bui Duc Tinh, Tran Huu Tuan, and Phong Tran</i>	
15. Integrating Community-based Participatory Carbon Measurement and Monitoring with Satellite Remote Sensing and GIS in REDD+ MRV systems	285
<i>Jay H. Samek, Usa Kinhom, David L. Skole, Pornchai Uttaruk, Teerawong Laosuwan, Phung Van Khoa, Sithong Thongmanivong, Chetphong Butthep, Do Xuan Lan, and Nguyen Xuan Giap</i>	
16. Getting to the Source: Community Planning and Costing of Adaptation Interventions in Vietnam and Lao PDR	309
<i>Caitlin Corner-Dolloff and Julian Moll-Rocek</i>	
III. Synthesis	
17. Place-based Lessons for Regional Economic Development and Sustainability	335
<i>Louis Lebel, Chu Thai Hoanh, and Chayanis Krittasudthacheewa</i>	
<i>List of Figures and Tables</i>	350
<i>Bibliography</i>	356
<i>Contributors</i>	391
<i>Index</i>	396

Foreword

It is a pleasure to introduce this book, the major output of the second phase of the Sustainable Mekong Research Network (SUMERNET). Since its start in 2005, the SUMERNET program has aimed to strengthen the knowledge-base for policy processes in pursuit of a sustainable Mekong region. With support from the Government of Sweden and other donors, the program provides grants and practical support to regional research teams who carry out original research and engage directly as well as through boundary partners with policy and planning at multiple levels. In keeping with SUMERNET's regional focus, grantees form consortia that include institutions from at least two and often three or four countries.

As Asia Centre Director of the Stockholm Environment Institute (SEI), I have particular interest in the program and this book because SEI's Asia Centre has hosted the SUMERNET Secretariat since its inception, and will continue to host it in Phase 3, which has just begun. The SUMERNET program's strategy and goals are directly aligned with SEI's mission to bridge science and policy for sustainable development. SEI, like SUMERNET, aims to inform policy processes through its research and assessment activities. Given its importance to SEI's mission, the SUMERNET program is a keystone of SEI's work in the Mekong region.

As explained well in the introduction, and as demonstrated throughout the book's in-depth case studies, the Mekong region is complex and dynamic, but its people, ecosystems, and livelihoods are also particularly vulnerable to climate change. As cross-border connections strengthen in the course of regional integration, some vulnerabilities are lessened, while others increase. The rising volume of cross-border flows of people, goods, money, and information also puts pressure on ecosystems and natural resources, creating challenges for long-term sustainability. The intersection of climate risk, regional integration, and sustainability is taken up throughout the book. Section I contains four "think pieces"

that explore central policy issues: energy and climate; ecosystem services; transboundary flows; and urbanization. Section II then goes into detail by documenting research carried out under the SUMERNET program. Each chapter within Section II presents one or more case studies that put the general comments from Section I into local context, a set of “place-based lessons” that are summarized in Section III, the synthesis.

Rising climate risk, increasing connections between countries, and rising pressures on ecosystems are not just issues for the Mekong region; they are defining trends for the world of today. Recent reports from the IPCC and the World Bank suggest that global temperatures could rise by four degrees centigrade over pre-industrial levels by the end of the century.

This book, one of the SUMERNET Book Series, is therefore relevant beyond the Mekong itself. It offers insights and methods that apply to other parts of the world as we work to understand – and respond to – the challenges and opportunities for long-term sustainability arising from climate change and international integration.

Eric Kemp-Benedict

Centre Director

SEI – Asia

Introduction: Pursuing Sustainability in the Mekong Region

Chayanis Krittasudthacheewa, Louis Lebel, and Chu Thai Hoanh

The Mekong and its changes

The Mekong region is not only rich in natural biodiversity and culturally diverse but also has one of the fastest growing regional economies in the world. Returns from economic growth have raised incomes and improved people's well-being, but many social and economic challenges remain. It has proven difficult to effectively integrate social, economic, and environmental objectives in pursuing sustainability in the region. Rapid change and the regional interdependence across the Mekong countries and China's Yunnan province has diverse consequences (SEI 2009). Looking back, there is both credit and blame; looking forward, both opportunities and threats.

A major challenge in the region is how to improve the livelihoods of those who depend heavily on natural resources. A combination of rapid economic development, demographic shifts, and rising living standards is posing a new set of challenges to meeting increased food and energy demands. Even as economies industrialize and service sectors expand, agriculture and fisheries remain fundamental to human well-being across the region (Be et al. 2008). Unfortunately, the expansion and intensification of crop production have been accompanied by land degradation, which now affects 10–40 percent of the land area in each Mekong country (IWMI-

SEA 2009). Deforestation and a decline in water quantity and quality are also important environmental issues. The rich biodiversity in the region has already been greatly affected by land-use changes and remains vulnerable to climate change.

Demand for energy is projected to grow between 7 percent and 16 percent per annum (ADB 2007). This increase is faster than the expected rate of economic growth, placing great stress on existing energy systems and also on the region's ecosystems. At the same time, these energy demands mask great disparities in the use of energy. Fast urbanization and motorization is a driver; at the same time 50 of the 260 million people in the Mekong region still have no electricity and must rely on traditional energy sources—fuelwood, charcoal, and farm residues (ADB 2007). Lack of access to sustainable and clean energy remains a significant cause of poverty in the region.

A range of socioeconomic mechanisms (trade, migration, demand for goods and services, unemployment) as well as natural ones (river flow, wind) transmit pressure from one country to another. Pressure on forests, fisheries, land, energy, and mineral resources has come, in part, from cross-border demand. Such demand has also driven foreign investment and both legal and illegal trade. International migration has also contributed significantly to the integration of economies. The movement of goods has been supported by connecting infrastructure. These linkages and complexities redefine the policymaking challenges for pursuing regional sustainable development (Kaosa-ard and Dore 2003). Despite signs of ever-expanding regional economic integration, some knowledge gaps still remain about the real extent of intra-region linkages, the consequences of integration, and the causes of inequitable development and losses of environmental services (Kummu et al. 2008).

Embedded within many of these integration efforts are conflicts over the use and management of natural resources. For instance, conflicts over water—both within and between countries—are intensifying from escalating industrial and agricultural demands for water and energy, interference with natural river flows from large hydropower dams, river-linking and diversion schemes, and altered sediment and nutrient loads affecting river ecosystems (Molle et al. 2009). Likewise, land for growing food and making a living is increasingly contested—especially where large investors are able to obtain vast land concessions at the expense of residents (Schönweger et al. 2012). In the Mekong region, rapid urbanization is another critical process of change, especially, in

the dynamic peri-urban areas where opportunities and challenges for sustainability are often in sharpest relief.

Why this book?

The literature on the Mekong region is growing rapidly. This volume brings together a new set of multi-country empirical case studies that contribute to this growing understanding of the complexities of resource management and governance in the Mekong region. In addition it identifies several significant lessons for engaging with policy and planning processes in the region in ways that support the pursuit of regional sustainability through the research efforts of a regional network, the Sustainable Mekong Research Network (SUMERNET).

Addressing sustainable development challenges

The Sustainable Mekong Research Network was set up to inform and influence policies relevant to the sustainable development of the Mekong region through collaborative research and assessment. Launched in 2005 with support from the Swedish government, SUMERNET grew from 14 founding member institutes at the beginning to include 47 member institutes in 2013 with additional funding support from the Climate and Development Knowledge Network (CDKN). The SUMERNET Secretariat has been hosted at the Asia Centre of the Stockholm Environment Institute (SEI – Asia) in Bangkok since it begun.

Building on past research collaboration the network constructively engages with policy processes at multiple levels—local through regional. Fostering, supporting, and sustaining high quality and policy-relevant research is at the heart of SUMERNET.

From the wide vista of sustainable development challenges in the region, SUMERNET identified the following research themes as its focus for its second phase (2010–2013) that have contributed to the studies in this volume:

Ecosystem services: How are ecosystem services being used, conserved, and governed?

Transboundary issues: What are the long-term impacts of regional economic integration on transboundary issues?

Poverty and livelihoods: How are livelihoods of the poor impacted by changes in ecosystem services and transboundary issues?

Urbanization: What have been the consequences of urbanization for society and the environment and how can regional and urban planning be redirected to support sustainability?

Energy and climate change: How can equitable and sustainable energy be pursued in the context of a changing climate?

This volume documents some of the work from the 10 collaborative studies granted from a wider set of more than 50 concept notes submitted through three competitive calls for demand-driven, policy-relevant research that included a multi-country and participatory design (see Fig. 1.1 SUMERNET study sites).

The recipient of grants in SUMERNET Phase 2 (2010–2013) were provided with mentoring throughout the study period and participated in several capacity-building workshops to help with writing, communication, and policy engagement. Another important feature is that all studies explicitly identified ‘boundary partners’ in their proposals which then became very important actors for policy engagement. Boundary partners, as originally identified by IDRC (2001), are those individuals, groups, or organizations with whom the program interacts directly and with whom the program can anticipate opportunities for influence.

These studies involved more than 100 researchers and about 30 national teams. Some of the insights and knowledge generated from the implementation of these projects in the past two years are shared in ten chapters of Part II of this volume.

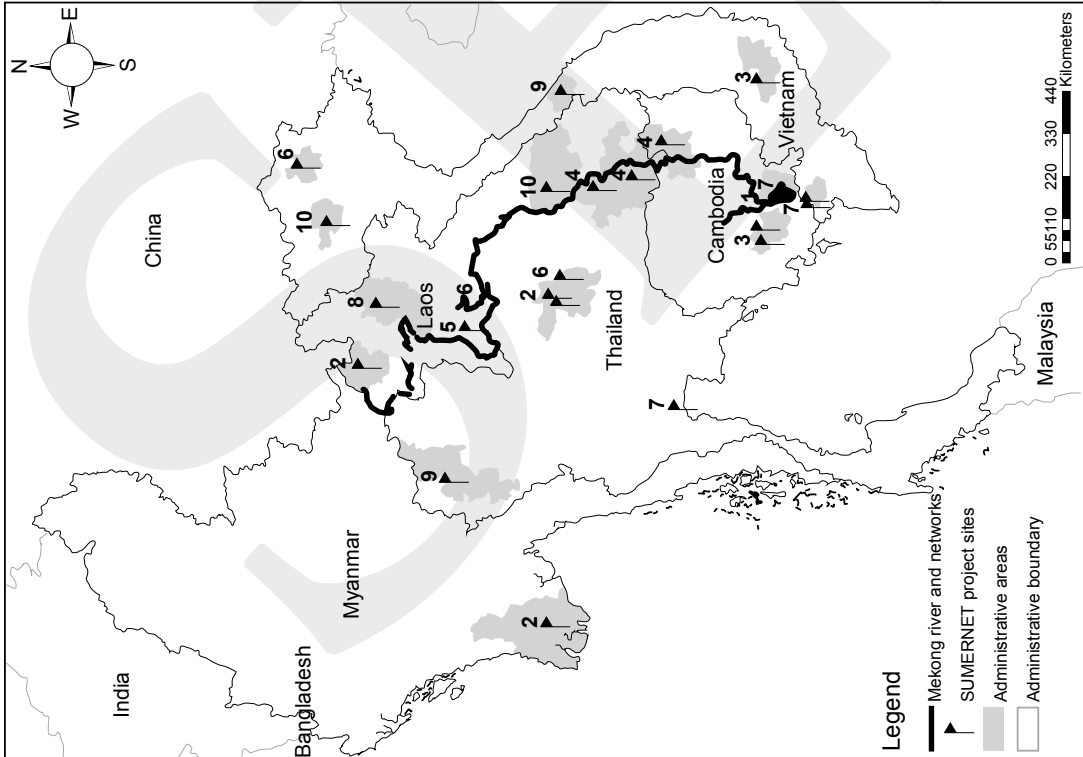
Organization of this book

This book contains 17 chapters, including this Introduction, which are organized in three sections.

Part I contains four chapters produced from a series of ‘policy think pieces’ on key sustainable development issues in the Mekong region identified by a wider group from the SUMERNET network, i.e. Energy, economy, and climate change in the Mekong region (Chapter 2); Valuing ecosystem services in the Mekong region (Chapter 3); Transboundary flows of resources, people, goods, and services in the Mekong region (Chapter 4); and Urbanization and sustainable development in the Mekong region (Chapter 5).

Fig. 1.1 SUMERNET study sites

- 1 Vulnerability Assessment of Livelihoods in the Lower Mekong Basin (LMB): Adaptation Options for Enhancing Capacity of People Living in the Most Vulnerable Flood-prone Areas in Cambodia and Vietnam
- 2 Making Economic Integration Work for the Rural Poor through Contract Farming Practices
- 3 Evaluation of Pilot Program on Payment for Forest Environmental Services in Vietnam and Policy Implications for Laos and Cambodia
- 4 Transboundary Fish Trade in the LMB: Impacts on Fisheries and Rural Employment in Cambodia, Lao PDR and Thailand
- 5 Impact of Urban Expansion on the Hinterland and Local Responses in the Mekong Region: A Study in Khon Kaen, Thailand, and Vang Vieng, Lao PDR
- 6 Research on Integrating Community-based Participatory Carbon Measurement and Monitoring with Satellite Remote Sensing and GIS in a Measurement, Reporting and Verification (MRV) System for Reducing Emissions from Deforestation and Forest Degradation-Plus (REDD+) and Agroforestry Carbon Sequestration Activities
- 7 Communicating Water-related Climate Change Risks to Improve Local Adaptation in the Deltas of the Mekong Region
- 8 Climate Change Implications to Food Security and Livelihoods of Small-scale Farmers
- 9 Sustainable Urban Tourism through Low Carbon Initiatives: Experiences from Hue and Chiang Mai
- 10 Participatory Social Returns on Investment (PSROI): Greater Mekong Basin Climate Change Adaptation Planning and Costing Project



Part II includes eleven chapters resulting from the cross-border collaborative studies mentioned above, which were guided by the four think pieces in the previous section and implemented by almost 30 national teams from Cambodia, China, Lao PDR, Myanmar, Thailand, Vietnam, and the Philippines.

The final section, Part III: Synthesis, is a concluding chapter (Chapter 17), emphasizing that the pursuit of sustainability takes place at multiple levels. It synthesizes the findings from all chapters to derive three key messages for the book.

Key messages

1. To understand drivers, opportunities, and constraints on sustainability at multiple levels in the Mekong region, it is important to take into account the linkages to higher and lower levels.
2. Insufficient progress on regional sustainability could undermine the climate resilience of societies in the Mekong region.
3. The impacts of economic integration, urbanization, and climate change vary greatly among places and communities. Development gains and environmental impacts are uneven among places and social groups. All of these underline the urgent need for policies and plans that put sustainability as a core objective and measurable target.

CLIMATE RISKS, REGIONAL INTEGRATION, AND SUSTAINABILITY IN THE MEKONG REGION



SUMERNET



SEI STOCKHOLM ENVIRONMENT INSTITUTE



Strategic Information and Research Development Centre

edited by **Louis Lebel, Chu Thai Hoanh, Chayanis Krittasudthacheewa, and Rajesh Daniel**

Rapid economic growth coupled with current and projected climate risks are challenging livelihoods and ecosystems in the Mekong region. In some locations unsustainable development has created or deepened vulnerabilities to climate change as well as global, regional, and transborder socioeconomic processes. More accessible and appropriate information is urgently needed on ways to reduce the negative aspects of development and adapt to the impacts of climate change in this region.

In this book, the Sustainable Mekong Research Network (SUMERNET) brings together multi-country studies, *each of which included significant engagement with boundary partners*, to analyze the impacts of, and ways to adapt to, climate risks and unsustainable growth in a highly interdependent region.

This book improves our understanding of the linkages between drivers, opportunities, and constraints on the sustainability of the Mekong region's ecosystems—at the transborder, sub-national, and local levels. Economic integration, urbanization, and climate change have impacts that vary greatly among locations. Hence, one key lesson in this book is that it is important to tailor policies and actions to specific places and communities, paying particular attention to the most vulnerable sections of the population, and the capacities of local actors. These multi-site and -country case studies provide much stronger tests of the merits and limitations of common policies than studies carried out in a single country, underlying the benefits of collaborative research.

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