



# **Transboundary Environmental Governance in Southeast Asia**

**4 December 2020**



Southeast Asia is among the most rapidly developing and globally connected parts of the world. The pace and scale of regional integration has accelerated and expanded alongside the megatrends of population growth, urbanisation, capitalism and industrialisation. Cross-border governance regimes have mobilised around the conservation or sustainable commodification of regional environmental goods such as biodiversity, food and water security, and carbon sequestration. There have also been coordinated transboundary efforts to build resilience to regional and global shocks including extreme weather events linked to human-induced climate change (for example, floods, droughts and biomass wildfires), air and water pollution, and the emergence and spread of infectious diseases. These complex environmental issues require cross-border environmental governance, both because they cannot be addressed within the boundaries of administrations or individual countries and also because they generate cascading and far-reaching impacts such as market fluctuations, livelihood transformations and human displacement and resettlement.

The purpose of this inter-disciplinary workshop is to explore how, why, when and what forms of transboundary environmental governance are emerging in Southeast Asia. We are interested in the submission of papers that examine the creation, operation and maintenance of transboundary governance regimes that are designed to address one of two generalizable sets of issues. These are: (a) conserving or sustainably utilising natural resources; and/or (b) strengthening resilience to regional or global shocks that connect place-based governance systems with wider socioeconomic and ecological processes.

We encourage the submission of papers from across the social and natural sciences and particularly welcome interdisciplinary engagements. The overall premise of this workshop is that transboundary forms of governance comprising multiple stakeholders are required to address environmental issues that cannot be settled at a single organisational scale of human interest. Questions that will guide the workshop discussions include:

- What transboundary forms of governance exist in Southeast Asia to sustain resources and habitats and/or to deal with emerging environmental threats and crises?
- To what extent do transboundary environmental governance systems complement or bridge gaps in formal state policy regimes?
- Can theorising the transboundary dimensions of environmental governance lend insights into more effective and inclusive pathways to conservation practice, sustainable resource management and disaster mitigation?
- How has the expanding role of markets in governance systems in Southeast Asia informed the priorities of transboundary environmental governance regimes, and to what effect?

## **WORKSHOP CONVENORS**

### **Dr Michelle MILLER**

Asia Research Institute, National University of Singapore

### **Prof David TAYLOR**

Department of Geography, National University of Singapore

### **Prof Jonathan RIGG**

School of Geographical Sciences, University of Bristol

### *Secretariat*

### **Mr Marcel BANDUR**

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## 4 DECEMBER 2020 • FRIDAY

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|----------------------|---|--|
| <b>09:00 – 09:15</b> | <b>WELCOME REMARKS</b>  |  |
| <i>09:00</i>         | <b>DAVID TAYLOR</b> , National University of Singapore<br><b>JONATHAN RIGG</b> , University of Bristol<br><b>MICHELLE MILLER</b> , National University of Singapore |  |
| <b>9:15 – 10:45</b>  | <b>PANEL 1 • LOCATING TRANSBOUNDARY ENVIRONMENTAL GOVERNANCE</b>  |  |
| <i>Chairperson</i>   | <b>MILES KENNEY-LAZAR</b> , National University of Singapore  |  |
| <i>09:15</i>         | <b>HELENA VARKEY</b><br>University of Malaya  | Hybrid Governance of Biofuels and Palm Oil as Sites of Political Contestation in the EU and Southeast Asia   |
| <i>09:35</i>         | <b>VANESSA LAMB</b><br>University of Melbourne<br><br><b>ZALI FUNG</b><br>University of Melbourne   | A Mobile Political Ecology of Sand and Sand-Linked Livelihoods in Southeast Asia   |
| <i>09:55</i>         | <b>JACK GREATREX</b><br>University of Hong Kong   | Parasites in Motion: Biological Control in Colonial Malaya, 1900s to 1940s   |
| <i>10:15</i>         | Questions & Answers   |  |
| <b>10:45 – 11:00</b> | <b>BREAK</b>  |  |
| <b>11:00 – 12:50</b> | <b>PANEL 2 • PARTICIPATION AND ITS LIMITS IN GOVERNING MEKONG HYDROPOWER</b>  |  |
| <i>Chairperson</i>   | <b>SUMIYA BILEGSAIKHAN TAIJ</b> , National University of Singapore  |  |
| <i>11:00</i>         | <b>MING LI YONG</b><br>The School for Field Studies   | Transboundary Hydropower Governance and Multi-Scalar Public Participation in the Mekong River Basin: Challenges and Opportunities for Meaningful Participation |
| <i>11:20</i>         | <b>DIANA SUHARDIMAN</b><br>International Water Management Institute   | Participation and the Underlying Politics of Development in Mekong Hydropower  |
| <i>11:40</i>         | <b>FLORAMANTE S.J. PONCE</b><br>Max Planck Institute for Social Anthropology  | Unpacking the Lao State Practices in Facilitating the 'Made in China' Dam: The Case of the Nam Tha 1 Hydropower Project  |
| <i>12:00</i>         | <b>THONG ANH TRAN</b><br><b>CECILIA TORTAJADA</b><br>National University of Singapore   | Institutional Adaptation to Transboundary Water Challenges in the Vietnamese Mekong Delta: A Discourse Analysis of Policy Change                               |
| <i>12:20</i>         | Questions & Answers   |  |
| <b>12:50 – 13:50</b> | <b>BREAK</b>  |  |

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|----------------------|---|--|
| <b>13:50 – 15:20</b> | <b>PANEL 3 • A ROLE FOR ASEAN IN TRANSBOUNDARY ENVIRONMENTAL GOVERNANCE?</b>  |  |
| <i>Chairperson</i>   | <b>SOOYEON KIM</b> , National University of Singapore   |  |
| 13:50                | <b>ALBERT M SALAMANCA</b><br>Stockholm Environment Institute  | Transboundary Climate Risk as a Framework for Transboundary Environmental Governance in Southeast Asia                     |
| 14:10                | <b>CHIN-HAO HUANG</b><br><b>ARJUN JAYARAMAN</b><br>Yale-NUS College   | The Politics of Nudging in Haze Mitigation: ASEAN's Role in Transboundary Environmental Governance                         |
| 14:30                | <b>ROBERT COLE</b><br>Mekong Regional Land Governance   | Regionalised Production, Transboundary Impacts: Prospects for More Sustainable Agri-Food Networks in Mekong Southeast Asia |
| 14:50                | Questions & Answers   |  |
| <b>15:20 – 15:40</b> | <b>BREAK</b>  |  |
| <b>15:40 – 17:30</b> | <b>PANEL 4 • HYBRID GOVERNANCE OF TRANSBOUNDARY COMMONS</b>   |  |
| <i>Chairperson</i>   | <b>ZU DIENLE TAN</b> , National University of Singapore   |  |
| 15:40                | <b>CARL MIDDLETON</b><br>Chulalongkorn University   | Beyond the Commons/Commodity Dichotomy in the Lancang-Mekong Basin: Implications for Transboundary Water Governance        |
| 16:00                | <b>RINI ASTUTI</b><br>National University of Singapore<br><b>YUTI ARIANI FATIMAH</b><br>Nanyang Technological University  | Unruly Fires: Nonhumans as Transboundary Actants in Governing Indonesia's Wildfires  |
| 16:20                | <b>DANNY MARKS</b><br>Dublin City University  | A Multi-Scalar Political Economy Analysis of Thailand's Widespread Urban Air Pollution                                     |
| 16:40                | <b>LAHIRU WIJEDASA</b><br>National University of Singapore  | Path Dependency of Land Use in Southeast Asian Peatlands   |
| 17:00                | Questions & Answers   |  |
| <b>17:30 – 17:40</b> | <b>CLOSING REMARKS</b>  |  |
| 17:30                | <b>MICHELLE MILLER</b> , National University of Singapore<br><b>DAVID TAYLOR</b> , National University of Singapore<br><b>JONATHAN RIGG</b> , University of Bristol |  |
| <b>17:40</b>         | <b>END OF WORKSHOP</b>  |  |

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## Hybrid Governance of Biofuels and Palm Oil as Sites of Political Contestation in the EU and Southeast Asia

**Helena VARKKEY**

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This paper focuses on biofuel sustainability governance under the European Union's Renewable Energy Directives (EU RED and RED II), contextualising them within the Southeast Asian palm oil sector. Palm oil is a significant source of biofuel, and the EU is the second-largest importer of palm oil in Southeast Asia. However, recent developments under the EU RED II are limiting palm oil producer countries' biofuel market access on sustainability grounds. The paper follows in the vein of Miller et al. (2020), who argue that the expanded role for markets in environmental governance can be seen as less about economic activities and more about power dynamics and political processes. Through such processes, hybrid environmental governance regimes become sites of political contestation: powerful states may attempt to broker a settlement designed to reinforce unequal power relations that sustain a specific set of hegemonic values at the expense of genuine environmental reforms, while weaker actors may try to mobilise to resist resource capture and enclosure by more powerful states. This paper first describes the market-based sustainable governance regimes of both biofuels (in the EU) and palm oil (based in Southeast Asia). It then discusses the interplay of these hybrid instruments as sites of political contestation, focusing on how power dynamics have influenced outcomes within these regimes. It concludes that these markets, political, and power dynamics affect sustainability trajectories within both of these sectors and regions. The competition between the biofuels and palm oil sustainability regimes have had the counterproductive effect of weakening sustainability governance objectives and outcomes, in at least three distinct ways: (1) the lowering of regulatory quality within the biofuels sustainability regime, (2) the undermining of the sustainable palm oil market, and (3) the indirect bolstering of unsustainable practices outside the palm oil sector.

**Helena Varkkey** is Senior Lecturer at the Department of International and Strategic Studies, University of Malaya in Kuala Lumpur, Malaysia. She has been interested in sustainable development throughout her academic career, and her interest in the field has evolved to a focus on transboundary pollution in Southeast Asia, particularly pertaining to the role of patronage in agribusiness, especially the oil palm industry, and its link to peat and forest fires and haze in the region. The findings from her PhD at the University of Sydney has been published as a book in 2016 as part of the Routledge Malaysian Studies Series. She has consulted for the Ministry of Foreign Affairs, Ministry of Environment, Science, Technology and Climate Change, and the Academy of Sciences, Malaysia on these topics. She continues to undertake research in this field.

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## A Mobile Political Ecology of Sand and Sand-Linked Livelihoods in Southeast Asia

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Southeast Asia is experiencing an unprecedented rise in sand extraction, with sand mined from rivers and coasts. This sand extraction is impacting resource-based livelihoods (Lamb et al. 2019). Sand flows move beyond state territorial borders (Miller 2019), suggesting the need to analyse how these flows (re)shape specific places and move across political boundaries. In this paper, we adopt a mobile political ecology approach (Elmhirst et al. 2018, Elmhirst 2018) as a way to focus on sand-linked livelihoods and flows. Such an approach can also provide a nuanced understanding of labour migration and its effects, particularly in the borderlands of Southeast Asia. Following Elmhirst et al. (2018, 3), we position out-migration as a potentially strategic choice, rather than framing mobility as a failure to adapt to social and environmental change and catastrophe.

In adopting this framework, we also build on the conceptualisation of flows, particularly in borderland areas (van Schendel 2002), to better understand the effects of flows of resources and labour in relation to Southeast Asia's transboundary sand commons. Research conducted into livelihood change and the rise of sand extraction and trade along the Salween River in Myanmar (Burma) and along the border with Thailand shows that many villages have been further "hollowed out" not as a direct consequence of, but alongside, the outward flows of resources and capital, such as the increasing sand mining operations for export. In highlighting these links between flows and fixes of a transboundary sand commons, what we add to existing literature is further understanding of the impacts of this out-migration on those who stay, and the ways this shapes the village and river ecologies.

**Vanessa Lamb** is a geographer at the University of Melbourne. As a senior lecturer in the School of Geography, she focuses research and teaching on human-environment geographies and political ecology of Southeast Asia.

**Zali Fung** is a PhD student at the School of Geography at the University of Melbourne. She is interested in political ecology and the politics of contentious water infrastructure projects in Southeast Asia, focusing on the Salween River basin and the Thai-Myanmar borderland. Previously she completed her master's in Water Science, Policy and Management at the University of Oxford, and worked for the NSW Government on water policy in Sydney, Australia.

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## Parasites in Motion: Biological Control in Colonial Malaya, 1900s to 1940s

**Jack GREATREX**

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Myanmar, Labuan, Japan, and Manila: the list of territories to which ‘beneficial parasites’ were sent from the Federated Malay States in 1932 is only a fraction of the destinations to which parasitic and predatory insects and fungi were transported from Malaya in the early twentieth century. Malaya was a centre of research in biological pest control. It bred, transported, exported and imported ‘beneficial parasites’ for the control of insect pests on a large scale, mostly within Southeast Asia. This paper explores these circulations of insects and fungi for pest-control purposes from colonial Malaysia to the broader Southeast Asian region. It argues that they are a mostly forgotten - but important - form of environmental governance in the region, employed to mitigate and combat environmental threats and crises and to build ecological resilience. It provides a historical perspective on an important issue today, when biological control is being re-emphasised in a world dealing with the catastrophic results of insecticide over-use. It considers these parasite transfers as an early form of ‘biocapital’, arguing that they were a precocious example of the entanglement of the biological life sciences with capitalism. In so doing, it provides a neglected but important historical perspective on vital issues of transnational environmental governance in the contemporary world.

**Jack Greatrex** is currently a PhD candidate at the History Department of the University of Hong Kong. He specialises in histories of infectious disease, pest control, and public health and is currently producing a dissertation on ‘pests’ in colonial Malaysia, Singapore, and Hong Kong. He was previously trained at the University of Cambridge, where he undertook an MPhil in World History and a BA degree in History.

He has previously presented at conferences at the Asia Research Institute at National University of Singapore; the D. Kim Foundation Workshop at SNU, Seoul; the ISHEASTM conference at Chonbuk University, Korea; and at the Hong Kong History Project conference in Hong Kong. His article, ‘The Rat, the Cow, and the Cockroach: Hong Kong and the Vanishing Animals of Plague Research’ was chosen as a runner-up for the 2018 Roy Porter Student Essay Prize and is currently being prepared for publication in *Social History of Medicine*.

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## Transboundary Hydropower Governance and Multi-Scalar Public Participation in the Mekong River Basin: Challenges and Opportunities for Meaningful Participation

**Ming Li YONG**

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The controversial development of large hydropower dams on the mainstream of the Lower Mekong River has been subject to unprecedented public scrutiny due to the implementation of the intergovernmental Mekong River Commission's (MRC) Procedures for Notification, Prior Consultation and Agreement (PNPCA). The PNPCA has thus far involved multi-scalar public consultations with differentiated stakeholders in Laos, Thailand, Cambodia, and Vietnam. This paper will examine how and why, in less-than-democratic Southeast Asian contexts, the PNPCA stakeholder consultations at the regional, national, and community levels have come to be criticised by riparian communities and civil society as a 'rubber-stamping' exercise. The paper argues that critical perspectives on public participation should be drawn upon to challenge assumptions that establish participation as an inherently good process, especially in the realm of development. In particular, constructions of the 'regional', 'national', and the 'local' in organising the PNPCA stakeholder consultations are infused with centre-periphery power dynamics between state agencies and Mekong River communities, alongside a politics in the ways 'publics' are formed, places are chosen, and temporality defined in the formation of these participatory spaces. While the PNPCA stakeholder consultations are valued for their function in disseminating information, there are mixed perceptions as to whether the consultations serve as a meaningful consultative forum due to inadequate community representation and their technocratic nature. To understand what meaningful public participation encompasses, the paper contrasts the PNPCA stakeholder consultations with participatory spaces created by the regional Save the Mekong coalition, which are informed by the principles of Free, Prior, and Informed Consent. The paper will demonstrate how such spaces provide useful lessons for transboundary environmental governance and public participation in the Mekong Region, in terms of reimagining scalar constructions, and broadening definitions of publics, places, and temporality in participation.

**Ming Li Yong** is a lecturer in Environmental Ethics and Development at The School for Field Studies, a non-profit organisation that runs field-based, environmental study-abroad programmes. Ming Li completed her PhD in Geography at The University of Sydney. Her research focuses on transboundary water governance, the political ecology of hydropower development, and community-based natural resource management in the Mekong Region, with a focus on Thailand and Cambodia. She is particularly interested understanding how the discursive and material dimensions of transboundary water governance shape stakeholder relationships and space in the Mekong River Basin.

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## Participation and the Underlying Politics of Development in Mekong Hydropower?

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Mekong hydropower is developing at rapid pace, while relying on private sector actors as financial supporter for the sector development (Geheb and Suhardiman, 2019; Middleton et al. 2009). Hydropower development in Laos in particular and in the Mekong in general has been framed as merely technical, managerial issue (Li, 2007). Presented as a technology of power (Katus et al. 2016), hydropower development is positioned as one of the country's key means to promote economic growth, through technological advancement to lift the country out of poverty and graduate from its Least Developed Country status. Top-down decision-making structures and approaches in hydropower development limits access to decision making to relevant government agencies and private sector actors, with local community coming into the picture only during the project implementation stage. Local community and local governments (provincial, district and village government) are indispensable part in hydropower decision making. Nonetheless, their roles and involvement are limited to discussions on resettlement and compensation. This paper looks at the current disjuncture in hydropower decision making, how it manifested in parallel institutional set up and arrangements (Suhardiman and Giordano, 2012) at respectively transboundary, national and local level, and how it affects local community's and local government's (in)ability to convey and negotiate their needs. Taking Pak Beng hydropower dam project in Pak Beng district, Oudomxay province, Laos as a case study, it looks at: 1) dominant narratives in hydropower development at respectively transboundary and national level; 2) how these narratives contribute to the creation and sustenance of current hydropower decision making structures and processes across scales; and 3) how it influences local community's and to a certain extent also local government's (in)ability to convey and represent their development needs and aspirations.

**Diana Suhardiman** has over 15 years experiences in natural resources governance with particular focus on water governance in Southeast Asia). She is currently a senior researcher at the International Water Management Institute based in Vientiane, Lao PDR. Her research focuses on the political economy and political ecology of natural resource governance, in particular at the intersection of land, water, food and energy. Linking the government's infrastructure development plans in hydropower, mining, agricultural plantation with the notion of 'weak' states and the overall shaping of state spaces, her research contests the predominantly a-political approach to economic development as means to benefit the greater common goods, and the way transfer of knowledge and technology is framed merely as technical, managerial issues. Prior to joining IWMI Diana completed her PhD at Wageningen University, the Netherlands.

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## Unpacking the Lao State Practices in Facilitating the ‘Made in China’ Dam: The Case of the Nam Tha 1 Hydropower Project

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Since the new Lao government implemented economic reforms in the 1990s, the country has seen a significant rise in the number of hydroelectric dams. Part of China’s Belt and Road Initiative (BRI), the Nam Tha 1 (NTha1) Hydropower Project is the largest single internal resettlement project in Lao history. Due to the secretive nature of Chinese projects and the Lao state, there has yet to be a single ethnographic study on the lives of NTha1’s resettled. This paper aims not only to present an ethnographic analysis of this Chinese dam but also to challenge the popular argument in international law that once a state enters an investment deal with hydropower investors and financiers, and allows these actors to influence and manipulate policy-making, the state tends to relinquish its sovereignty. The latter objective can be achieved by highlighting the agency and practices of the authoritarian Lao state in engaging with foreign investors, neighboring countries, and international financial institutions, while remaining the dominant actor when it comes to facilitating hydropower development and displacing rural riparian villagers. Drawing on ethnographic data collected during twelve months of fieldwork in Hardmoauk resettlement (NTha1’s largest resettlement in Bokeo Province), interviews with state officials, secondary analyses of documents produced by NTha1 and the Lao government, and following Bob Jessop’s approach towards reorganization strategies of national states, this paper scrutinizes the Lao state’s changing transnational partnerships and transregional linkages as well as the making of ‘sustainable hydropower development’ policies in Laos (internationalization of policy regimes). It will also assess the compliance of the NTha1 Company with essential components of the aforementioned policies. It will then move on to examine the Lao state’s outsourcing and decentralization practices related to the construction of dams and the displacement and resettlement of rural riparian villagers (destatization and denationalization strategies). Moreover, I will investigate how the ‘lack/absence of something’ discourse has been used by the Lao state not only to justify their reorganizational strategies but also to compel rural riparian villagers to resettle. Apart from understanding the political economy and history of Lao hydropower development, this paper also looks at the local dynamics of a BRI project.

**Floramante S.J. Ponce** is a PhD candidate at the Max Planck Institute for Social Anthropology, Halle/Saale, Germany. He has been a member of the Research Group ‘Electric Statemaking in the Greater Mekong Subregion’ since September 2017, under the supervision of Prof Dr Kirsten Endres. From April 2018 until September 2019, Ponce conducted in-depth ethnographic fieldwork in a hydropower resettled village in Bokeo Province, north-western Laos. His dissertation project primarily focuses on the social relations as well as everyday experiences of the resettled villagers with processes of relocation, electrification, and livelihood reconstruction. He studied BS Sociology in Polytechnic University of the Philippines (Lone summa cum laude and batch valedictorian, 2012); MA Sociology in Ateneo de Manila University (Dr Ricardo Abad social science awardee, 2015); and MA Sociology and Social Anthropology in Central European University, Budapest, Hungary (with distinction, 2017).

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## Institutional Adaptation to Transboundary Water Challenges in the Vietnamese Mekong Delta: A Discourse Analysis of Policy Change

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Massive hydropower projects together with resource extraction activities operating in the Mekong basin impose dramatic transboundary effects on the rural waterscapes and water-dependent livelihoods of millions of inhabitants in the Vietnamese Mekong Delta (VMD). This paper investigates how these drivers, coupled with complexities of climate-related factors and expansion of local water-engineering infrastructures, are linked to the alterations of hydrological flows over the past few years, and how local governments have mediated their responses in tackling these challenges across the flooding and coastal zones of the delta. Drawing on interviews and discussions with key stakeholders, including government officials at the provincial level, environmental experts and academics as well as with the study of public and policy documents, the paper argues that institutional responses to the coupled domains of water management and adaptation in the VMD lag far behind novel water challenges characterised by significant reduction of floodwater flows in the upper floodplains and saltwater intrusion in the coastal zones of the delta, causing serious disruption of local agro-ecosystems and aggravating community livelihoods. The study findings contribute to the ongoing policy debates on whether a steering committee would be set up in the VMD to coordinate collaborative efforts among jurisdictions in addressing the shared water issues and enhance its resilience to environmental risks in the long term. This study urges that, aligned with this adaptation initiative, transboundary water implications should be incorporated into the decision-making process at the delta level to improve its capacity in tackling foreseeable water challenges in the future.

**Thong Anh Tran** is Research Fellow at Asia Research Institute, National University of Singapore (NUS). His research interest includes (transboundary) environmental governance, human-environment interactions, 'state-society' relations, rural livelihoods, energy transformation, and climate change adaptation in the Mekong region. At NUS, he is involved in the research project titled "Sustainable Governance of Transboundary Environmental Commons in Southeast Asia", examining hydropower development in Laos and its transboundary environmental implications for common resources and resource-based livelihoods of riparian communities in the Vietnamese Mekong Delta.

**Cecilia Tortajada** is Senior Research Fellow, Institute of Water Policy, Lee Kuan Yew School of Public Policy, National University of Singapore. She has over 25 years of experience on water, environment and natural resources management and at present works on impacts of global changes on water resources, environment, and food. Dr Tortajada is the author and editor of more than 40 books. Her work has been translated into Arabic, Chinese, Farsi, French, German, Hindi, Japanese and Spanish languages. She is an advisor to major international institutions like FAO, UNDP, JICA, ADB, OECD, IDRC and GIZ, and has worked in countries like Africa, Asia, North and South America and Europe on water and natural resources and environment-related policies. She is also the member of the OECD Initiative on Water Governance.

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## Transboundary Climate Risk as a Framework for Transboundary Environmental Governance in Southeast Asia

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Southeast Asia has made a comparatively small (though not inconsequential) contribution to climate change, yet it suffers disproportionately from its effects. Both drought and flooding have increased, oceans are acidifying, and the region's coral reefs have been affected by bleaching. Importantly, each of these examples cannot be addressed by national actors alone.

The region's ecosystems, economies and societies are all linked. Both the impacts themselves and the adaptation actions taken – or not taken – therefore impinge on the management of transboundary environmental resources. The concept of Transboundary Climate Risk (TCR) offers a useful framework for identifying, assessing and addressing these impacts. This includes consideration of the drivers or pathways of risk (such as trade, finance and natural resources) and what they mean for transboundary environmental governance.

At the global level, transboundary climate risks can hamper countries in delivering on the SDGs and the Paris Agreement. But such multilateral agreements also provide opportunities to catalyse transboundary cooperation, particularly when they complement national and regional-level commitments. Recognition of TCR will be critical to the 2023 Global Stocktake under the Paris Agreement and the formulation of effective National Adaptation Plans, while regional and global cooperation to manage those risks will be key to meeting the Global Goal on Adaptation. Better understanding of TCR should underpin transboundary environmental governance in Southeast Asia in a manner that is sensitive to national contexts but recognises the interconnected nature of the region.

This paper will provide an overview of TCRs and their relevance to Southeast Asia, before offering practical options for transboundary environmental governance. These options will address both relevant policy processes and institutions, including: (re)framing discussions in the ASEAN Working Group on Climate Change; managing social, financial and environmental flows at the regional or sub-regional level; and governing transboundary resources such as water and fisheries.

**Albert Salamanca** is Senior Research Fellow at the Stockholm Environment Institute where he leads its research cluster on climate change adaptation and manages its initiative on transforming development and disaster risk. His current projects include the intersection of human rights, climate change and environment; internal displacement, climate change and migration; participatory climate services; knowledge co-production; land and agrarian change in Thailand; mapping interactions of different SDG goals; and applying nexus thinking in the environment and humanitarian sectors. Albert has a PhD from Durham University (UK).

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## The Politics of Nudging in Haze Mitigation: ASEAN's Role in Transboundary Environmental Governance

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Given the Association of Southeast Asian Nations' (ASEAN) emphasis on organizational minimalism, how does it induce change and conformity in its members' policies? This paper argues ASEAN consensus has a demonstrable impact on tackling the region's transboundary haze, particularly in the Indonesian archipelago. When the organization articulates its environmental initiatives with a strong consensus, such clarity in its norms incentivizes reluctant member states to adopt the institution's environmental policies. Why? What members of the in-group say matters; the stronger the consensus within the group, the more compelling it becomes for non-conforming members to consider the collective agreement seriously. The micro-process for such pro-social behaviour draws from nudging, whereby the provision of regionally-developed guidelines facilitates the adoption of parallel policies at the national or communal level. We find that a strong ASEAN consensus on addressing the transboundary haze is a key precursor for nudging to take place, inducing member states to implement regional environmental initiatives. An observable outcome of this behaviour is a noticeable decrease in the brightness of hotspots created by burning peatlands. As a corollary to the argument, regional discord or fragmentation reduces the likelihood for nudging, hence increasing member states' unilateral prerogatives that yield intensified levels of burning and higher hotspot brightness. This paper applies a mixed-method approach: discourse analysis of ASEAN summit statements on the haze from 2001-2019 to determine the strength of regional consensus, process tracing in case studies to assess the presence of nudging, and R programming applied to NASA's satellite data to analyse the corresponding changes in the brightness of peatland hotspots. The empirical findings from this study will uncover ASEAN's role in environmental governance and identify when nudging is more or less likely to work in incentivizing member states to curb the transboundary haze through a collective, regional approach.

**Chin-Hao Huang** is Assistant Professor of Political Science at Yale-NUS College. His research and publications focus on the international relations of East Asia and Southeast Asian politics. He is the Lee Kong Chian NUS-Stanford University Distinguished Fellow on Contemporary Southeast Asia (2018-2019) and recipient of the American Political Science Association (APSA) Foreign Policy Section Best Paper Award (2014). His fieldwork has been supported by Singapore's Ministry of Education, MacArthur Foundation, United States Institute of Peace (USIP), UK Foreign and Commonwealth Office, and the Rockefeller Foundation.

**Arjun Jayaraman** is a senior at Yale-NUS College majoring in Global Affairs and research assistant for the project on "ASEAN's Role in Transboundary Haze Mitigation and Environmental Governance".

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## **Regionalised Production, Transboundary Impacts: Prospects for More Sustainable Agri-Food Networks in Mekong Southeast Asia**

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Agricultural production has become increasingly regionalised in Mekong Southeast Asia since the 2000s, as countries undergo varied agrarian transitions while also courting foreign investments to modernise farming. These trends, along with rising incomes and changing consumption behaviours, have fuelled the formation of agri-food networks that connect marginal rural landscapes to urbanising centres of demand, frequently across borders. While there have been many benefits to rural people's livelihoods from changing production practices and income sources, there have also been new and more widely composed risks. This paper examines environmental impacts that firms operating at a distance knowingly or otherwise externalise into the hands of smallholders, including land degradation (with associated debt cycles) and unsustainable land-use change. The paper draws on a study of how upland farmers northeast Laos experienced a rapid shift from primarily subsistence to commercial farming of maize for industrial feed and livestock in Vietnam, in doing so linking marginal smallholders to global agri-food corporations. In the context of long-held state ideals to intensify commercial production and bring subsistence farmers into the market, the study shows how policy aims can run out of control in remote settings where environmental governance also has limited reach and efficacy. The paper considers the implications of regionalised agri-food production for transboundary environmental governance, how environmental impacts can be brought more effectively under the responsibility of buyers of agricultural commodities, and prospects for more sustainable agri-food networks.

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## Beyond the Commons/Commodity Dichotomy in the Lancang-Mekong Basin: Implications for Transboundary Water Governance

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Extensive hydropower construction across the Lancang-Mekong basin is changing the river's hydrology and ecology, with implications for the availability and governance of common pool resources, as well as for riparian livelihoods. In this paper, I assess how the transboundary commons are being reworked as the river is transformed by large dam operation. The paper applies an analytical lens that seeks to move beyond a commons-commodity dichotomy in water-related resource governance (Paerregaard and Andersen, 2019) to argue that at the present time the Lancang-Mekong River is neither fully commodified nor fully a commons, but rather a hybrid of the two. The paper will examine how transboundary hybrid governance regimes are reworking the hybrid commons, drawing attention to how states, communities, and even private actors, seek to maintain particular types of commons, whilst simultaneously either furthering or resisting commodification of some properties of the river. The paper will discuss the implications of this hybrid governance perspective for recent hydropolitics in the river basin and existing and new transboundary water governance institutions, namely the Mekong River Commission and the Lancang-Mekong Cooperation framework.

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## Unruly Fires: Nonhumans as Transboundary Actants in Governing Indonesia's Wildfires

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The 2015 forest fires in Indonesia devastated 2.7 million hectares, creating haze pollution that reached as far as southern Thailand. At the regional level, ASEAN Member States have signed the ASEAN Agreement on Transboundary Haze Pollution (AATHP) in an effort to manage this recurring region-wide problem. The AATHP, however, is strongly embedded in the 'ASEAN Way' of avoiding interfering in the domestic affairs of member countries by adopting a non-confrontational approach to addressing transboundary haze. In this geopolitical setting, the legal and administrative measures against perpetrators of wildfires can therefore only be enacted by individual countries. In this article, we contribute to the transboundary discourse on haze pollution by focusing on how the companies indicted of wildfire are being prosecuted. We do so by focusing on the agency of nonhumans (fires, hotspot data, type of agricultural commodities, fire prevention devices, and territorial border). Testimonies from witnesses and experts were solicited from court rooms in Indonesia to establish who, or what, caused these wildfires. We employ the concepts of in-scription (inscribing a message into nonhumans) and de-scription (describing nonhuman agency by human actors) used in actor-network theory to render legible the material and discursive agency of nonhumans in crossing borders, as represented by plantation boundaries and (sub)national jurisdictional borders in wildfire investigations. Drawing upon these processes of in-scription and de-scription, humans in our study (companies' attorneys, expert witnesses, government officials, community witnesses, the judges) created their own particular de-scriptions of fire realities. Research findings show that 'biomass fire' is never a stable object of scientific interpretation. Fire, as a non-human agent of transboundary environmental change, renders borders fluid and permeable in its transgressive response to human disturbances of forests and peatland areas. Our study thus provides ways of examining the role and influence of nonhumans in one of the most political and complex environmental issues facing Southeast Asia: wildfires and its transboundary haze. In doing so, the paper provides a more pluralistic method in doing research beyond the existing anthropocentric approach to understanding transboundary haze governance.

**Rini Astuti** is Research Fellow at the Asia Research Institute, National University of Singapore. She is part of the multidisciplinary team researching transboundary environmental governance commons in Southeast Asia hosted at National University of Singapore. Her current research focuses on the emerging peatland governance apparatuses in the Southeast Asia region (Indonesia in particular) and its implications for the mono-agricultural sector both on the large scale and for smallholder plantations. Rini obtained her PhD in Geography from Victoria University of Wellington, New Zealand. She previously worked as a research fellow at RSIS in Nanyang Technological University and as a climate change program coordinator at the United Nations Development Programme Indonesia. She has published articles relating to forest governance, climate change mitigation and land politics in numerous journals. She has also published opinion editorials and commentaries on broader environmental issues through numerous publication outlets.

**Yuti Ariani Fatimah** is Research Fellow at Asian School of the Environment, Nanyang Technological University. Her current research focuses on the role of community participation in peatland restoration in Indonesia, particularly on the human and ecology relationship and knowledge production. Yuti obtained her PhD in Innovation Sciences from Eindhoven University of Technology, the Netherlands. She previously worked as a journalist at Tirto.id and a researcher at the Smart City Community and Innovation Centre in Bandung Institute of Technology. She has published articles relating to renewable energy, development project and knowledge translation in numerous journals.

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## A Multi-Scalar Political Economy Analysis of Thailand's Widespread Urban Air Pollution

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Thailand's urban air pollution has increasingly worsened recently with some cities, such as Bangkok and Chiang Mai, ranking as having some of the world's worst air pollution in the past couple years. It has led to a marked rise of public health problems, environmental and economic damage, and a threat to the country's tourism industry. This paper seeks to explore Bangkok's air pollution from multiple scales and analyses the political economic drivers of the three major sources of the urban air pollution: traffic emissions, agricultural emissions (mostly from burning agricultural products), and industrial emissions. It also examines the transboundary dimension of Thailand's urban air pollution: emissions emanating from Thailand's neighbors, including Cambodia, Myanmar, and Laos, and the failure of both the government and ASEAN to curb these emissions from rising. The paper will also look at the needed policy response to address this problem, starting with the call to enact a Clean Air Act, and the reasons why the Thai government has yet to pass this new regulation. Overall, I argue that Thailand's air pollution is a problem of governing the transboundary environmental commons, which refers to the governance of shared resources across administrative boundaries within as well as between nation-states (Miller 2019). Further, this problem is also due to Thailand's fragmented and weak governance in which no lead agency is responsible for this problem and those which are responsible do not work together and have differing incentive structures. I conclude with a discussion of what civil society is doing to address this issue and possible ways forward to better address this serious problem.

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## Path Dependency of Land Use in Southeast Asian Peatlands

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The failure of peatland governance in Southeast Asia to consider ecosystem function has led to the loss of globally significant stores of carbon. Unsustainable peatland use is exemplified by the rapid release of carbon in haze-causing peatland fires. Over the past two decades, haze has grown from being a national to a regional issue, causing friction between countries and becoming one of the biggest transboundary governance challenges in the ASEAN region. While there have been attempts to enact more ecologically sustainable and socially inclusive use of peatlands through (inter)national regulatory mechanisms and a wide variety of green growth partnerships aimed at exerting controls on transboundary haze, the path dependency of previous land use policies has resulted in current initiatives that, at best, slow down rather than change the current trajectory. Here, we apply an environmental problem framework to synthesize current peatland science and look at past and present policies on peatland use to map the trajectory of policy evolution and identify key areas where further scientific work is needed. This can potentially help in extending the current understanding of the transboundary governance challenges posed by peatland use in Southeast Asia and contribute to ongoing efforts to incorporate scientific knowledge on peatland ecosystem function into future policies.

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## ABOUT THE ORGANISERS & CHAIRPERSONS

**David TAYLOR** is currently Provost's Chair Professor and Professor of Tropical Environmental Change in the Department of Geography at National University of Singapore (NUS). He is a Panel Member of the European Science Foundation (2010-) and a member of the editorial boards of the journals *The Anthropocene*, *The Holocene* and the *Singapore Journal of Tropical Geography*. David's main research interests centre upon the human dimensions of environmental change in Africa and Asia. He is currently PI of the Social Sciences Research Council (SSRC) Singapore-funded research project "Transboundary Environmental Commons in Southeast Asia" (TECSEA) research project (<https://www.tecsea.info/>), which brings together collaborators from NUS and across Southeast Asia with diverse disciplinary backgrounds ranging from human and physical geography to biology, development studies, economics, law and political science. He was the PI and Scientific Coordinator of the European Union FP7-funded HEALTHY FUTURES project (2011-2015). HEALTHY FUTURES investigated the environmental change impacts on vector-borne, infectious diseases in eastern Africa and involved researchers based at 17 institutions in Africa, Europe and Asia (Singapore).

**Jonathan RIGG** is professor of human geography in the School of Geographical Sciences at the University of Bristol. He was formerly Director of the Asia Research Institute and Professor in the Department of Geography at NUS. His work focuses on agrarian change, livelihoods and pathways of transformation in the Southeast Asian region. He is the author of *Rural development in Southeast Asia: dispossession, accumulation and persistence* (Cambridge University Press, 2020) and *More than rural: textures of Thailand's agrarian transformation* (Hawaii University Press, 2019).

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**Miles KENNEY-LAZAR** is Assistant Professor in the Department of Geography, National University of Singapore. His research examines the political ecologies of land and property across the Mekong Region. He is interested in how the capitalization of land produces unequal patterns of dispossession and resistance, transforming the region's agrarian and environmental geographies. He has specifically focused on land issues related to the expansion of agro-industrial plantations and special economic zones in Laos and Myanmar. Yet, he also maintains broader theoretical interests in the intersections of value and nature under capitalism. This work is published widely in geography, area studies, development, and agrarian studies journals. He is also currently writing a book manuscript with the working title *Socializing Land: Contradictions of Dispossession in Laos*.

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**Zu Dienle TAN** is a PhD student in the Department of Geography at the National University of Singapore. She is part of the transboundary environmental governance commons in Southeast Asia project. Her thesis seeks to understand how various land use land cover factors affect peatland burning and the implications for peatland restoration. She received her Masters in conservation ecology from the University of Michigan Ann-Arbor and her Bachelors in restoration ecology from the University of Illinois Urbana-Champaign.