Introduction

Sustainability and Asia

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What is the added value of investigating the contested concept of “sustainability” in tandem with the geographical marker of “Asia” in today’s world? To answer this question, we need to return to the formulation of the *problematique* of “sustainability” and “sustainable development” several decades ago. The *Our Common Future* report of the World Commission on Environment and Development (WCED)—also known as the Brundtland Commission—put forward the most commonly recognized and most frequently used definition of “sustainable development” (SD) in 1987.¹ Development could be made sustainable, so the report stated, “to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED 1987: 15). The report further proclaimed that there were limits to development, but that improvements in technology and social development could “make way for a new era of economic growth” (ibid.).

Inherent in this vision of economic, ecological, and social sustainability was the idea that economic growth could not only coexist with a decline in poverty and a rise in income distribution, but also with environmental protection. Critics have found this position anthropocentric—motivated by human welfare instead of the intrinsic value of nature—and an example of “weak sustainability”, according to which natural and man-made capital can be substituted without limits (Seghezze 2009). The continued economic focus in SD means that there exists an inherent tension between the economic requirement of efficiency and the ecological demand of intergenerational solidarity as outlined in the report (ibid.). In spite of the contradictions inherent in the concept of SD, the notion of “green growth”, advocated since 2000, builds on the same inherent tension. Similarly, at the 2012 United Nations (UN) Conference on Sustainable Development, the notion of “green economy” was reiterated, as well as the focus on the three pillars of SD, namely, society, economy, and environment (UN 2012).

Turning our gaze upon Asia in the early twenty-first century (and being aware of the different interpretations of what constitutes this

region in doing so) reveals the limits of formulations of SD several decades ago. The fast-paced growth of some Asian economies, combined with population pressures, an increasing demand for resources, and rapid urbanization, challenges the sustainability of an “economics of sustainability” (Klaassen and Opschoor 1991). According to UN estimates, the urban Asian population will grow by 0.7 billion between 2010 and 2025 (Jones 2012a: 14). In addition, although some significant improvements have been made with regard to social sustainability in several Asian countries, it is clear that large sections of populations remain highly vulnerable today. As will be demonstrated, the characteristics of “growth” in an Asian context in particular require notions of sustainability that transcend the nature-society dichotomy and that conceive of both as more of a “hybrid system” (ibid.).

Most of the world’s rapidly developing economies are located in the Asia-Pacific region, and the unprecedented speed of industrialization that has characterized development in the region has also led to both an increasing demand for resources and a rise in the production of carbon dioxide emissions. The demand for raw materials in Asia is estimated to reach eighty billion tons by 2050 (Jones 2012b: 7). Changing patterns of energy and land use and the consequent depletion of resources and environmental degradation have received increasing attention globally in the form of debates on climate change and the loss of biodiversity (UNEP, ADB, and UNESCAP 2012), but the issue is particularly pertinent in Asia. In addition, regional approaches to sustainability in Asia are complicated by the coexistence of highly developed countries (such as Japan) and rapidly developing countries (such as China and India). As has been the case since the “limits to growth” concept was first advocated during the 1970s, discussions between developed and developing countries remain constrained by questions regarding who has the right to pollute and who is responsible for the consequences of pollution. At the UN Framework Convention on Climate Change (UNFCCC) in November 2013, representatives of developing countries left the table during the debate on who was to pay for the devastation of Typhoon Yolanda (Haiyan) (*Economist* 2013).²

The Asia-Pacific region is also the region with the largest number of people exposed to the risk of the impacts of climate change (ibid.). Hosting over half of the world’s population, 85 percent of people who have been affected by disasters reside in Asia (UN 2012; Islam 2013). The region is particularly vulnerable because of the continuing rise in population, rapid urbanization, and persistent social inequality.

While less than 20 percent of the population resided in cities during the 1960s, today almost 50 percent of the Asian population is urban. Asian “megaurban regions” of thirty million and more inhabitants are economically valuable, but also present increased human and economic costs in the event of disaster, the mapping and management of which has become increasingly complex (Douglass 2013: 3–5). One of the visions inherent in sustainability is that of “capacity building”, and the vulnerability exposed above also begs the question of what institutions and mechanisms are in place (Estes 1993). The intricacy and sheer size of urban regions in Asia offer valid insights for future problems of urbanization on a global scale.

Apart from the factors of population, industrialization, and urbanization, it is also imperative to consider technology in discussions on sustainability that involve Asia. The “green growth” model implies job creation and economic growth based on the development and use of clean technologies for renewable energy, the reduction of pollution, and urban planning (Jones 2012b). In 2005, “green growth” was implemented as a strategy for the Asia-Pacific region (UNESCAP 2012). Because of the resource-intensive production model in the Asia-Pacific region—as of 2005, the production of one unit of gross domestic product (GDP) required three times the amount of resources as required elsewhere in the world—the focus has been on the improvement of resource efficiency through “systems innovation” and the development of “green technologies” for low-carbon development (UNEP, ADB, and UNESCAP 2012: xiii–xv). As critics have noted, however, the sustained focus on “growth” reveals the continued focus on GDP—leading to terms such as “greenback growth” (Jones 2012a)—thereby integrating sustainable technologies into profit making. Although the focus on efficient technologies has been associated with a “conservative” managerial approach to sustainability, it needs to be noted that green technologies have also been linked with strong rather than weak sustainable development because they signify a move away from capital-intensive production technologies only (Humphrey, Lewis, and Buttel 2002; Seghezze 2009).

It remains challenging to engage with “sustainability” as an economic, social, and ecological project when different standards of measurement continue to exist. The divergence between anthropocentric understandings of sustainability that focus on human welfare and biocentric and ecocentric understandings that emphasize the intrinsic value of nature leads to radically different visions and solutions.³ In practice, notions of economic sustainability and anthropocentric defi-

nitions continue to dominate policymaking. In 2007, The Economics of Ecosystems and Biodiversity (TEEB) initiative of the UN was designed to measure biodiversity loss as part of efforts to draw attention to the economic benefits of ecological systems; at the Rio+20 UN Conference in 2012, the importance of including environmental damages in GDP calculations was reiterated (Jones 2012a; UN 2012). Even green groups have used the concept of “ecological services” as a tool to communicate the value of nature, thereby implicitly “pricing” nature (Thiel 2013).

In addition, divergent interpretations of “sustainability” coexist with simplified understandings of “traditional” and “modern” beliefs and practices concerning the relation between man and nature. In the context of changing patterns of land use in many Asian countries, it is vital to recognize the complexity and diversity of both these beliefs and practices. Several groups in Asia have played a role in bringing about the 1992 World Commission on Environment and Development (WCED) as part of the indigenous peoples (IPs) movement that fought to obtain legal recognition and protection of land and resources (Estes 1993: 4–6). Although it is important to remember that the cosmologies of indigenous peoples have often inspired a rethinking of the relation between nature and society, it is equally important to keep in mind the heterogeneity of IPs and land use practices and the invalidity of stereotypes about the “ecologically noble savage” (Redford 1991). Similarly, linking increased rationalization to a rise in ecological consciousness, as “ecological modernizers” would have it, is equally too simplistic. Rationalization, the dual nature of which Max Weber already repeatedly pointed out, requires efficiency rather than long-term perspectives. In addition, the ecological consciousness that “modernizers” associate with later stages of modernization has in fact coexisted with visions of the materialistic use of nature for many centuries (Estes 1993; Seghezze 2009; Chew 2001).

The acknowledgment of the difficulty of reconciling divergent definitions, in combination with the recognition of the complication of practices, have also led to increased research collaboration on the topic in the region itself. As such, one of the merits of the 1987 report, namely, its emphasis on the “interdependence” of economic, ecological, and social questions, has been put into practice (Estes 1993). The articles in this special symposium were originally presented at a conference on “Plural Coexistence and Sustainability: Asian Experiences in Interdisciplinary Perspectives” organized jointly by Nanyang Technological University (NTU), Singapore, Kyoto University, Japan,

and Sun Yat-sen University, Guangzhou, People's Republic of China (PRC), at the School of Humanities and Social Sciences of NTU (11–12 March 2013).⁴ “Sustainable earth” is one of the five peaks of research excellence at NTU, which started to focus increasingly on sustainable development two decades ago in the context of Singapore’s water shortage.⁵

As a technological university, NTU’s engagement with sustainability has manifested itself in investment in green technologies. The university also hosts Singapore’s first ecobusiness park, CleanTech Park, and the Earth Observatory of Singapore (EOS), which conducts research on both natural disasters and climate change. The School of Humanities and Social Sciences has provided a unique angle to this growing academic and policy attention to “sustainable earth” by establishing an interdisciplinary cluster on Environment and Sustainable Research, which also contributed to the conceptualization of the aforementioned workshop. Kyoto University’s Centre for Southeast Asian Studies (CSEAS) initiated its project “In Search of Sustainable Humanosphere in Asia and Africa” in 2007 with funding from the Japanese Ministry of Education. Participating researchers defined the “humanosphere” as an integrated whole that includes the geosphere (earth), biosphere (living organisms), and human society, or both the “ecological and social environment” (Lopez 2013: 24). Through the use of the Humanosphere Potentiality Index, researchers have attempted to revise definitions of sustainability that are based on temperate climate zones and that are mostly oriented toward economic growth and human development, such as the GDP index, the gross national product (GNP) index, and the United Nations’ Human Development Index (HDI) (ibid.; Sato 2013).⁶ This was a critical effort to revise anthropocentrism that still included society as a principal factor and also moved beyond the biosphere. Finally, Sun Yat-sen University has also strongly focused on the interaction between the environment and technology in the context of a rising Asia, partly through its School of Asia-Pacific Studies. The Department of Earth Sciences, which conducts research on—among others—environmental geochemistry and geo-disaster prevention, was one of the first to be established in China.

Against the background of this interuniversity and interdisciplinary collaboration, the abovementioned conference addressed questions related to sustainability in Asia. The main themes in the articles of this special issue revolve around the three pillars of sustainability (economic, social, and ecological) and include urbanization, disaster

vulnerability, resource consumption, and land use. The themes are approached from different levels of agency and structure, including intellectual debates, government responses, social and political structures, economic models, and community practices. The approach is highly interdisciplinary: contributors are from the fields of architecture and urban planning, environmental studies, history, economics, sociology, area studies, and development studies. The articles engage with the relation between nature and society in the form of how both specific Asian nation-states and cities deal with sustainability challenges, but also in the form of how the question of sustainability relates to Asia as a region, thereby including both developing and developed countries.

The issue opens with two articles that provide historical insight into the question of sustainability and resilience, using the level of the city as an entry point. Andrea Flores Urushima discusses postwar city making and urbanization and the creation of the “megalopolis” in Japan (the Tokaido megalopolis or Pacific Belt) through the official debate on urban development between 1967 and 1972. Her focus is on the 1960s, when the most crucial shift from a rural to an urban-based society occurred. Those who engaged in the debate attempted to balance the contradictory requirements of natural preservation and economic development. Interestingly, advocates of the importance of natural landscapes emphasized both their intrinsic aesthetic value and their environmental value, thereby vastly differing from the contemporary emphasis on human needs. At the same time, however, the debate also reflected the concern with continued growth that still characterizes current policy discourses on sustainability. The debate was visionary in its focus on the increased importance of leisure and tourism and its advocacy of “free-time cities.” Finally, the preservation of “cultural landscapes” that featured in these debates still figures prominently in debates held by the United Nations Educational, Scientific and Cultural Organization’s (UNESCO) World Heritage Centre today.

Also at the level of the city, but making connections to nation-state building and the role of communities, Kah Seng Loh and Michael D. Pante offer a comparative and historical approach to flood management in Asia through the case studies of Metro Manila and Singapore. Discussing the history of floods and flood management between the post-WWII period and the 1980s, the authors look at both national and local specificities to determine which efforts have been successful. A key point the authors make is that floods are not just the result of natural processes such as topography, climate, and tidal influences—

they are also the result of political, demographic, and socioeconomic changes during this period. The authors argue that flood management was as much about taming nature as it was about disciplining human nature through the promotion of civic-minded and socially responsible behavior. The authors emphasize the top-down and technocratic approach to flood management in both Metro Manila and Singapore, but they also discuss the role of communities as both assets and liabilities. As the article demonstrates, flood management also involves issues of land use, development, and housing.

The next two articles deal with sustainability in Asia from a broad and theoretical perspective, covering a number of selected Asian countries and fusing theory with empirical research. Md Saidul Islam and Si Hui Lim use an integrated sociological framework in their analysis of disaster management in Asia with data obtained from seven countries, namely, China, India, Indonesia, Japan, Thailand, Taiwan, and Vietnam. Relying on the pressure and release model and the theory of the double-risk society, the authors take into account wider political, economic, and social factors in their discussion of disaster management. Emphasizing the social construction of vulnerability, the authors argue that disaster mitigation and adaptation strategies in Asia have too narrowly focused on disasters as the result of “natural” hazards. In addition, the social construction of vulnerability also leads to the question of the capacity-building dimension of sustainability. Analogous to the highly lucrative “green technologies” discussed earlier, the authors suggest that disaster management partnerships could be the next lucrative business that governments would want to compete for. Regional partnerships, however, can only be a solution if there is a move away from mere financial aid disbursement toward long-term mitigation efforts and knowledge sharing.

Youngho Chang, Jiesheng Tan, and Letian Chen discuss the concept of sustainability from an economics perspective and offer a survey of both weak (economic) and strong (ecological) sustainability approaches. This relates back to the question of how we measure sustainability and whether weak sustainability is sufficient as a concept for the twenty-first century; the question of whether there can be an unlimited trade-off between man-made and natural capital has been highly debated (Seghezzo 2009). Using a sample of countries located in Asia that are characterized by different levels of development, availability of resources, and development strategies—China, Japan, Singapore, South Korea, and the United Arab Emirates (UAE)—the underlying question that the authors address is whether or not these

countries can at least be weakly sustainable. The authors propose a modified version of the Solow-Hartwick model, which relaxes the conditions of constant population and technology—both of which are highly relevant in an Asian context—present in the original model. This adapted model, the authors argue, is hence more inclusive and reliable than existing models such as the genuine savings (GS) model or the more inclusive, but also more abstract, Environmental Sustainability Index (ESI) model.

Finally, Adrian Albano, Els van Dongen, and Shinya Takeda take us to the local level in their discussion of land ownership, land use and forest conservation in the indigenous territory of Tinoc, Ifugao, the Philippines. Through a case study of the Kalanguya, the authors deconstruct simplistic binary models of “traditional” sustainable land use and communal ownership versus “modern” destructive land use and private ownership. The Kalanguya, the authors argue, are “indigenous capitalists”: not only did they know the materialist use of nature in the past; today, they also voluntarily participate in a competitive market for profit-earning purposes through the cultivation and trading of cash crops. The study’s findings reveal both the heterogeneous and dynamic nature of IP’s land use and the implications of the lack of de facto land security that comes with communal ownership in the current system of legal pluralism. Within Asia, the case study is also significant in a Southeast Asian context in particular, where palm oil monoculture cropping has led to unprecedented levels of deforestation through slash-and-burn tactics, often involving IP’s territories.

Given the limited space, this issue can only address some of the questions related to sustainability in an Asian context. However, through a focus on several levels of analysis and by paying attention to historical background and theoretical insights in combination with empirical data, we hope to expose some of the dimensions and manifestations of the conflicting visions and complex practices inherent in “sustainability” in an Asian setting. As the presence of large-scale “multidisciplinary alliances” and interuniversity collaboration in studying the interaction among the environment, technologies, societies and institutions demonstrate, we are faced with unprecedented levels of difficulty at unprecedented scales that do not allow for simple solutions—we are facing a “complex of mega-trends” (Lopez 2013: 23; Douglass 2013: 5). This issue, then, not only seeks to highlight some of the problems inherent in the notion of SD in Asia today, but also the importance of “multidisciplinary alliances” and more holistic conceptions of “sustainability” for a new era of complexity.

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Notes

1. It was, however, not the earliest appearance of the term. The International Union for Conservation of Nature (IUCN) already used it in a report that dates from 1980. See Humphrey, Lewis, and Buttel (1993: 221).

2. The carbon emissions deal between China and the US that was announced on 11 November 2014 seems to indicate a move beyond this discussion. However, since China merely expressed that its emissions would peak in 2030, whereas the US agreed to sharper cuts (26 to 28 percent) in carbon emissions by 2025, it remains to be seen whether the deal is really a turning point.

3. As Nadasdy (2005) notes, however, there is recognition of a spectrum underlying different taxonomies. For other formulations along this spectrum, including "resourceism" and "deep ecology" or "technocentrism" and "ecocentrism", see Nadasdy (*ibid.*: 295).

4. The workshop was funded by a strategic initiative grant from Nanyang Technological University, entitled "Plural Co-Existence and Asian Sustainability" (grant number: M4081020), with Hong Liu as the principle investigator.

5. The latter is a pressing issue for many Asian countries; in spite of containing the largest share of renewable freshwater resources, paradoxically, the Asia-Pacific region also has the lowest water availability per capita (UNESCAP 2012: 6). As the recent debates on the export of alfalfa from the United States to the PRC demonstrate, water shortage is a prominent sustainability issue overall.

6. Apart from the HDI, other earlier attempts to replace the GDP index include the Physical Quality of Life Index, the International Indicator of Social Progress, the Sustainable National Income, and the Genuine Progress Indicator.

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