Introduction

Referring to the historical process of agricultural development and industrialization that occurred in the West, the economist Theodore Schultz boldly claimed in 1951, in an article entitled “The Declining Economic Importance of Agricultural Land,” that the role of agricultural income diminishes relative to the growth of national income and that, through the introduction of new technology and improved knowledge, agricultural productivity can be improved to overcome the diminishing returns to land. He wrote,

Land is no longer the limitational factor it once was . . . the economy has freed itself from the severe restrictions formerly imposed by land. This achievement is the result of new and better production possibilities and of the path of community choice in relation to these gains. This achievement has diminished greatly the economic dependency of people on land; it has reduced the income claims of this factor to an ever-smaller fraction of the national income; and it has given rise to profound changes in the existing forms of income-producing property. The underlying economic development has modified in an important way and relaxed substantially the earlier iron grip of the niggardliness of Nature.

(Schultz 1951, 725)

Global agricultural productivity has improved since the 1960s as new agricultural technologies were developed and transferred from research stations to the field. Global yields of cereal crops nearly tripled between 1961 and 2014 from 1,422 to 3,886 kg per hectare (World Bank 2015). In the developing countries of East Asia and Latin America, crop yield quadrupled and tripled respectively, yet despite the marked improvement in agricultural productivity during the last five decades land has not been spared or released, but has simply become more valuable. Contrary to the claim made by Schultz more than half a century ago, soaring demand for food and energy has intensified competition for land and resources. This chapter examines contemporary land issues and problems to highlight the interconnectedness of agricultural transformation processes occurring in the region and looming land scarcity, which raises questions on environmental sustainability, equity and growing concern over land grabs.
The next section revisits agrarian transformation in Southeast Asia since the last quarter of the twentieth century till the present day. Key features of the transformation include institutional reforms aimed at establishing property rights, and expansion of commercial agricultural production and trade as Southeast Asia became increasingly integrated into the global market economy. Privatization of land and agricultural intensification have heightened pressures on land as various stakeholders, including the state, corporations, investors and smallholders, compete to legitimize their claims to control land. This has resulted in loss of communal land sharing practices, and collective and reciprocal work in previously marginal areas (e.g., Li 2014a, 2014b). Simultaneously food security has become a significant issue with urbanization, rising demands for food and increased food prices. This affects the most vulnerable population groups who are unable to easily adapt their livelihoods to economic transformations from beyond yet are still dependent on land and natural resources for their survival.

From agrarian society to industrialization: the changing role of agriculture and land

Following WWII, independent states across Southeast Asia adopted land reforms to distribute land to the peasantry and move away from more informal notions of land tenure to formal land ownership (Hayami and Kikuchi 1981; Feeny 1988). Governments directed institutional reforms in different ways, from recognition of private ownership of land to socialist reforms that collectivized ownership. Land reform in some countries, notably the Philippines, failed to remove a very unequal structure of land distribution, which has hampered national economic development and created considerable dissidence and radical social movements.

Since the 1980s, institutional reforms in several countries have promoted formalization of property rights – for both private and public lands – often aided by Western donors and international financial institutions (Table 24.1). These reforms involved cadastral surveys and registration of land parcels, establishing administrative rules that regulated land use and/or ownership rights (Jones 2010). Such reforms were promoted by institutions such as the World Bank to encourage private sector investment and re-allocation of land based on market principles (Deininger 2003). At the same time, a suite of land policies was introduced across the region to demarcate areas of public and private lands, and prescribe who had legitimate access to different types of land.

Alongside institutional reforms that defined people’s access to land and resources, development organizations and international research agencies promoted modern agricultural technologies to boost production. The state played a central role in efforts to improve agriculture through the development of irrigation systems, the application of high-yielding varieties and technological innovation. State-led interventions of the 1960s and 1970s in conjunction with Green Revolution technologies contributed to expanding agricultural areas, particularly in the lowlands where staple crops such as rice were farmed. Between 1965 and 2013 the area of cereal crop production doubled in Thailand, while in Indonesia, Myanmar and Vietnam, the area of production increased 1.6 to 1.8 fold (Figure 24.1).

Green Revolution technologies boosted agricultural productivity across Southeast Asia. Annual land productivity between 1970 and 2009 in Southeast Asia increased by 2.2 percent, in comparison with 1.8 and 1.5 percent in Latin America and Sub-Saharan Africa respectively (Briones and Felipe 2013). In terms of cereal crop yields, Vietnam achieved the highest level, of more than 5,425 kg per hectare, followed by Indonesia’s 5,085 kg in 2013 (Table 24.2). In
Table 24.1 Land reforms in selected Southeast Asian countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>1960</td>
<td>Basic Agrarian Law, sporadic registration of land</td>
</tr>
<tr>
<td></td>
<td>1995</td>
<td>Land Administration Project, sponsored by the World Bank and implemented by the National Land Agency</td>
</tr>
<tr>
<td>Malaysia</td>
<td>1965</td>
<td>National Land Code</td>
</tr>
<tr>
<td>Thailand</td>
<td>1954</td>
<td>Land Act, partial recognition of land rights</td>
</tr>
<tr>
<td></td>
<td>1985</td>
<td>Systematic Land Titling, financed by the World Bank and implemented by the Department of Lands, Ministry of Interior</td>
</tr>
<tr>
<td>Cambodia</td>
<td>1992</td>
<td>Land Law, registration of land and recognition of use rights</td>
</tr>
<tr>
<td></td>
<td>2001</td>
<td>Land Law, transfer of state public land to private land and allocation of state private land to economic land concessions</td>
</tr>
<tr>
<td>Laos</td>
<td>1994</td>
<td>Land Forest Allocation, registration of village land and recognition of communal land use rights</td>
</tr>
<tr>
<td></td>
<td>1997</td>
<td>Land Law; Land Titling Project, sponsored by the World Bank and implemented by the Department of Land, introducing systematic land titling in urban and peri-urban areas and allocating land use rights</td>
</tr>
<tr>
<td>Myanmar</td>
<td>1948</td>
<td>Land Nationalization Act, state ownership of land and lease arrangements with farmers</td>
</tr>
<tr>
<td></td>
<td>1953</td>
<td>Land Nationalization Act, state ownership of land and lease arrangements with farmers</td>
</tr>
<tr>
<td></td>
<td>2012</td>
<td>Farmland Law and Vacant, Fallow, and Virgin Land Management Law</td>
</tr>
<tr>
<td></td>
<td>2014</td>
<td>Draft National Land Use Policy</td>
</tr>
<tr>
<td>Vietnam</td>
<td>1988</td>
<td>Land Law, Resolution 10, de-collectivization of farms, registration of land and recognition of land use rights</td>
</tr>
<tr>
<td>Philippines</td>
<td>1963</td>
<td>Land Reform Program, abolishes share tenancy and establishes owner-operated family size farms</td>
</tr>
<tr>
<td></td>
<td>1971–72</td>
<td>Land reform, allowing farmers to rent and in some cases own land</td>
</tr>
<tr>
<td></td>
<td>1988</td>
<td>Comprehensive Agrarian Reform Program, land distribution and allocation to landless farmers</td>
</tr>
<tr>
<td>Timor-Leste</td>
<td>2009</td>
<td>Drafting of Transitional Land Law</td>
</tr>
</tbody>
</table>

Sources: Ledesma (1980); Fujita and Phanvilay (2008); Jones (2010); Prosterman and Vhugen (2012); Thu (2012); Neef et al. (2013); Woods (2013); Lau (2014)

Vietnam the yield particularly surged after the mid-1980s, as the government adopted a market economy, which encouraged active engagement of private sector investors and farmers (Figure 24.2). Laos also experienced a 4.7 fold improvement of cereal crop yield between 1961 and 2013 (Table 24.2, Figure 24.2). As will be discussed later in the chapter, improved accessibility to the market has enabled farmers across the region to increase their use of machinery, fertilizers and pesticides, and to diversify their agricultural activities. This includes planting more than one annual crop and experimenting with genetically modified (GM) seeds.

Improved productivity of agriculture in Southeast Asia has been accompanied by changes in the composition of agriculture between 1970 and 2010, notably the switch from production of cereal crops, such as rice, an essential staple across Southeast Asia, and traditional tropical export products, including coffee, tea, spices, sugar and nuts, to commodities highly sought after in the global market, including oil palm and rubber (Briones and Felipe 2013). Nonetheless rice has remained highly important throughout the region and, in both Thailand and Myanmar, overemphasizing rice production has prevented crop diversification and deprived these economies of...
Agriculture and land in Southeast Asia

Figure 24.1  Land under cereal crop production for selected Southeast Asian countries

Source: World Bank Data 2015 (excluding Singapore, Brunei Darussalam)

Table 24.2  Yield of cereal crop in selected Southeast Asian countries (Unit: kg/ha)

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>1,542</td>
<td>2,001</td>
<td>2,866</td>
<td>3,800</td>
<td>4,026</td>
<td>4,878</td>
<td>5,085</td>
</tr>
<tr>
<td>Malaysia</td>
<td>2,097</td>
<td>2,383</td>
<td>2,836</td>
<td>2,740</td>
<td>3,040</td>
<td>3,660</td>
<td>3,889</td>
</tr>
<tr>
<td>Thailand</td>
<td>1,675</td>
<td>2,076</td>
<td>1,911</td>
<td>2,009</td>
<td>2,719</td>
<td>2,977</td>
<td>3,022</td>
</tr>
<tr>
<td>Cambodia</td>
<td>1,127</td>
<td>1,590</td>
<td>1,180</td>
<td>1,362</td>
<td>2,134</td>
<td>3,016</td>
<td>3,117</td>
</tr>
<tr>
<td>Laos</td>
<td>884</td>
<td>1,366</td>
<td>1,422</td>
<td>2,268</td>
<td>3,018</td>
<td>3,832</td>
<td>4,150</td>
</tr>
<tr>
<td>Myanmar</td>
<td>1,535</td>
<td>1,611</td>
<td>2,600</td>
<td>2,762</td>
<td>3,101</td>
<td>3,863</td>
<td>3,641</td>
</tr>
<tr>
<td>Vietnam</td>
<td>1,856</td>
<td>2,104</td>
<td>2,016</td>
<td>3,073</td>
<td>4,112</td>
<td>5,177</td>
<td>5,425</td>
</tr>
<tr>
<td>Philippines</td>
<td>996</td>
<td>1,350</td>
<td>1,606</td>
<td>2,065</td>
<td>2,581</td>
<td>3,232</td>
<td>3,532</td>
</tr>
<tr>
<td>Timor-Leste</td>
<td>1,404</td>
<td>1,277</td>
<td>1,270</td>
<td>1,608</td>
<td>1,937</td>
<td>2,451</td>
<td>1,880</td>
</tr>
</tbody>
</table>

Source: World Bank Data 2015 (excluding Singapore, Brunei Darussalam)

broad-based agricultural growth, while mismanagement and pricing policies have hampered the returns to agricultural labor. Meanwhile, Indonesia, Malaysia and the Philippines have developed a dependence on imported rice to ensure sufficient national stocks.

Shifts in crop composition occurred in response to the globalization of agricultural trade and investment, and the rapidly growing global demand for food and energy crops during the 1980s and 1990s (McMichael 2012; Cotula 2012). Choices of what crops to grow, how to grow them and where to market them are closely linked to the development of globalised webs of supply and market chains. In particular, oil palm rapidly expanded in Southeast Asia during the 1990s (Koh and Wilcove 2008; Borras and Franco 2010; UNEP 2011), especially in Indonesia and
Yayoi Fujita Lagerqvist and John Connell

Malaysia, where nearly 90 percent of the world’s oil palm is produced (McCarthy 2010; Fold and Hansen 2007). Since the 1970s these two countries have lost 30 percent and 20 percent of forest areas respectively, mainly to oil palm, as the resource frontier has extended (Wicke et al. 2011). Demand for oil palm, a valuable biofuel, is projected to grow in the future, and the area of cultivation is expected to expand further in Indonesia and Malaysia, and extend into other Southeast Asian countries including the Philippines, Thailand and Cambodia. The rapid expansion of oil palm in Indonesia and Malaysia has also had effects on land use across the region as oil palm displaced other plantation crops including coconut and rubber. Rubber, crucial in Malaysia and an early component of settlement schemes in Thailand (Connell 1978), has extended further. In particular, fueled by demand in China, rubber has been rapidly expanding in traditionally non-rubber growing countries including Cambodia, Laos and Myanmar.

The expansion of oil palm especially, and of other large-scale commercial crops including coffee, cocoa and rubber, has resulted in massive deforestation, as secondary forests and swidden fields are turned into plantations, and diverse agricultural system transitioned toward monoculture (Padoch et al. 2007; Padoch and Sunderland 2014; Mertz et al. 2009; Hall 2011, Ziegler et al. 2009; Fox et al. 2009; Li and Fox 2012; Harrington 2015; McAllister 2015). Conversely, a general decline in swidden has occurred by choice and under pressure. Throughout the region, a dual household economy has been established where subsistence agriculture is combined with an increased engagement with the market economy (Dove 2011). That transition was most rapid in accessible lowland areas, but is quickly expanding into the upland areas. Processes of land conversion are extremely complex according to differences in topography, ethnicity, traditional ecological knowledge, market integration, government policies on development and land management and the evolution of cross border trade (Pham et al. 2015). Although there are pockets

Figure 24.2  Yield of cereal crop production (kg/ha) for selected Southeast Asian countries
Source: World Bank Data 2015 (excluding Singapore, Brunei Darussalam)
of remote areas where transitions are yet to occur, as in Myanmar’s Shan State and northern Laos, where opium poppy cultivation remains significant (UNODC 2014), they too are at the forefront of the market economy (Sturgeon et al. 2013; Woods 2013). While in lowland areas of Thailand where change has been comprehensive, the ‘traditional’ peasantry have effectively disappeared (Dayley and Sattayanurak 2016).

More or less formal schemes have allocated land in the region, ranging from managed stakeholder schemes (such as FELDA in Malaysia), nucleus-estate smallholder schemes (Indonesia) and joint ventures with customary tenure systems (eastern Malaysia). Settlements have been relatively successful in Malaysia in incorporating the relatively poor but less so elsewhere, where impoverishment has occurred, government services are inadequate and cultural integrity has been lost, as in Indonesia and Laos (Li 2009, 2014a; Evrard and Goudineau 2004; High 2008). Land shortages and infertile land have been the fate of many resettled populations, exacerbating local tensions and disputes (Lagerqvist et al. 2014; Dao 2015, 2016) especially where ethnic minorities have been resettled elsewhere, or where land has been declared ‘degraded’ or ‘state forest’ and expropriated by state officials in the name of poverty alleviation with the unfulfilled promise that plantations would provide new wage labor opportunities for those dispossessed (McAllister 2015). Few schemes have met the needs of the poor (e.g., Sutton 2001), and the nucleus estate model has sometimes left customary landowners vulnerable to significant exploitation and losses (Cramb 2013). Although settlers were supposed to focus on agricultural activities, increasing numbers have engaged in non-farm livelihoods outside the settlements and, in Malaysia at least, some settlement land has been sold for urban expansion.

Agricultural change and development have been accompanied by institutional reforms on property rights, intensification of agricultural production through new technology and integration into national and global commodity markets. Alongside policies promoting foreign direct investment and trade, institutional reforms that recognized private property rights facilitated expansion of commercial agriculture. Development efforts have focused on strengthening priority value chains, for various crops from rice and maize to palm oil, coffee, tea and cocoa, to increase farmer productivity and profitability while reducing detrimental environmental effects. Such processes often enabled private investors and powerful elites to acquire land and accumulate wealth, while at the same time excluding some of the more vulnerable population groups. Where agriculture had been collectivized, as in Vietnam, peasants have fought strongly to return to family farming and individual ownership, but through an egalitarian structure (Gorman 2014). Integration into the global market economy, private investment and formalization of property rights have also opened new economic opportunities for smallholders across Southeast Asia and enabled them to stake their claim on land in various ways (Hall 2011; Suhardiman et al. 2015). Yet, transport inadequacies, poor access to credit and extension advice, new seeds, fertilizers and irrigation technology, and limited storage facilities, impede participation of some smallholders in national and international markets.

Institutional reforms and policies that aim to turn land into capital continue to expand agricultural horizons across Southeast Asia in several ways. Lambin and Meyfroidt (2011) point to a “rebound effect,” where improved efficiency to produce highly sought after commodities has resulted in expansion rather than containment of agricultural land use. This is exemplified by the expansion of oil palm into marginal agricultural land across Southeast Asia, while oil palm expansion and the parallel expansion of rubber in traditionally non-rubber producing countries highlighted the need to pay attention to the transboundary “displacement effect” of land use transformation (Lambin and Meyfroidt 2011), as changes occurring in one location led to more rather than less cropland expansion in other parts of the region through various inter-connected
mechanisms. Moreover, agricultural frontiers are not only being pushed further into the marginal lands by the expansion of large-scale plantations involving private investors and the state, but also through the expansion of smallholder agricultural activities, as households invested their income from non-farm activities into commercial farming: the “remittance effect” (Lambin and Meyfroidt 2011). Even where commercial agriculture exists remittances may constitute as much as 80 percent of rural incomes, especially where migration has resulted in agricultural labor shortages (Neilson and Shonk 2014; Manivong et al. 2014). To better understand this transformation, the next section further examines the changing context of rural livelihoods and the persisting importance of land.

**Changing contexts of rural livelihoods and the unchanging importance of land**

As countries achieved economic growth, agriculture’s role in the national economies of Southeast Asia began to change. Across Southeast Asia, the proportion of rural population is declining rapidly (Table 24.3). Urbanization has been particularly prominent in Malaysia and Indonesia, and also in the Philippines and Thailand. In addition to the declining rural population, in Indonesia, Malaysia and Thailand, agriculture’s share of GDP also declined sharply since the 1960s as these countries achieved industrial development and economic growth (de Koninck and Rousseau 2012; Briones and Felipe 2013). Figure 24.3 shows that a parallel decline in agriculture’s contribution to the national economies in Cambodia, Laos and Vietnam occurred later, in the 1990s, as these countries adopted variants of market reform and economic growth was assisted by a new influx of private investment. The structural changes in agriculture influenced the context of rural livelihoods in a number of ways.

First, penetration of the market economy since the 1980s has allowed increasing numbers of rural households across Southeast Asia to engage in commodity production and move away from subsistence farming. Entrepreneurial farmers have harnessed agricultural technologies to actively participate in commercial crop production in both lowlands and uplands, and livestock rearing and sales, alongside the ‘domestication’ and sale of non-timber forest products.

Among such farmers are ethnic minorities in mainly mountainous areas who have previously been blamed for resource degradation through their engagement in swidden agriculture in the uplands (Cramb et al. 2009; Cramb and Curry 2012; Fox et al. 2009; Hall 2011; Sturgeon et al. 2013; Li 2014a), but at the same time largely excluded from accessing other land and resources.

<table>
<thead>
<tr>
<th>Country</th>
<th>1970</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>83</td>
<td>50</td>
</tr>
<tr>
<td>Malaysia</td>
<td>67</td>
<td>29</td>
</tr>
<tr>
<td>Thailand</td>
<td>79</td>
<td>56</td>
</tr>
<tr>
<td>Cambodia</td>
<td>84</td>
<td>80</td>
</tr>
<tr>
<td>Laos</td>
<td>90</td>
<td>67</td>
</tr>
<tr>
<td>Myanmar</td>
<td>77</td>
<td>69</td>
</tr>
<tr>
<td>Vietnam</td>
<td>82</td>
<td>70</td>
</tr>
<tr>
<td>Philippines</td>
<td>67</td>
<td>55</td>
</tr>
<tr>
<td>Timor-Leste</td>
<td>87</td>
<td>70</td>
</tr>
</tbody>
</table>

*Source: World Bank Data 2015 (excluding Singapore, Brunei Darussalam)*
Agriculture and land in Southeast Asia

Figure 24.3 Share of agriculture, percentage of GDP for selected Southeast Asian countries
Source: World Bank Data 2015 (excluding Singapore, Brunei Darussalam)

(Peluso 1992; Peluso et al. 1995; McElwee 1999; Poffenberger 1999). Nonetheless upland farmers have increasingly become incorporated into regional and international commodity flows (e.g., Turner 2011; Harrington 2015). However, government pressure on upland farmers in several countries, including Vietnam, Thailand and Laos, to abandon shifting cultivation and to resettle has become a neo-colonial means of control (e.g., Dery 2000; Sikor 2007) alongside ‘land grabs’ that strengthen state sovereignty in marginal areas (Dao 2015). Remote and ‘frontier’ land in many regions has been taken over by commercial operations, and in some upland areas people are struggling to retain and formalize their claims to land by cultivating high value crops on what was communal land (Cramb et al. 2009; Cramb and Curry 2012; Hall 2011, 2013; Peluso and Lund 2011). Throughout the region, farmers have negotiated with other actors, both private and state, to legitimize their claims to land and resources, and their abilities to diversify and ingeniously adapt agricultural activities.

Second, transboundary land acquisition for production of food and energy crops, often referred to as international ‘land grabs,’ is raising new concerns as smallholders are often forcefully displaced from their land and excluded from accessing natural resources that are crucial to their livelihoods (Borras et al. 2011; Baird 2011; Li 2011; McMichael 2012; Neef et al. 2013; Woods 2013; McAllister 2015). A significant part of that dispossession can be attributed to large-scale land acquisition by investors and state authorities (Zoomers 2010; Deininger et al. 2011). ‘Land grabs’ produce social inequity by delimiting people’s access to land, food resources and livelihood opportunities, particularly significant in this century with the growth of agribusinesses in Cambodia; China accounts for half of all foreign investment in land and agricultural projects in both Laos and Cambodia, with Thailand and Vietnam also playing a large role (Polack 2012). National elites play a further role in such ‘investment,’ and land grabbing is carried out by both domestic and transnational companies, often with encouragement.
and support from central governments. Most production – food, feed, fuel – is exported within the circuit and logic of the global agricultural-market complex. On occasion land grabs have been so excessive that land has been used highly inefficiently or not at all (Schönweger and Messerli 2015).

Land grabs usually involve large-scale plantations for the cultivation and processing of export commodities, but they also include mines, dams, special economic zones and tourist resorts. Conflicts have emerged when so-called vacant or unused land is in reality informally occupied by smallholder subsistence farmers who must be relocated so that the land can be ‘improved’ for large-scale commercial use (Lagerqvist et al. 2014). As in Cambodia and Malaysia, governments have often chosen not to recognize customary land tenure and ejected traditional owners, resulting in disputes and violent conflict, as landowners resist removal and relocation and are forcibly removed by government intermediaries, including national armies. Local groups may also come into conflict among themselves, as land acquires value and populations grow, while transactions may be manipulated by local bureaucrats without regard for the social consequences (McCarthy 2010; Li 2002). State intervention in land matters is often more harmful than beneficial (Lunkapis 2013; Urano 2014).

The growth of transnational agriculture-based businesses working in Southeast Asia is reflected in the land acquisitions. Malaysian conglomerates have a majority ownership in approximately two-thirds of companies acquiring land for oil palm in Indonesia. Sime Darby Berhad, a Malaysian company, is the world’s largest agriculture-based transnational corporation, holding 633,000 hectares of land within Southeast Asia, mostly for growing palm oil and also rubber. Other ASEAN conglomerates include Thailand’s Charoen Pokphand Food Public Company Ltd, which focuses on food processing, livestock and aquaculture. The Philippine company San Miguel Corporation has operations across ASEAN (Polack 2012). These companies, and their patrons, have been the main beneficiaries of the expansion of oil palm.

Third, complex agricultural changes and the acquisition and opening up of new areas have contributed to environmental degradation, especially where forests have been cleared and pesticides and fertilizers are commonly used, as in the Mekong Delta, where salinity has also threatened agricultural systems (Miller 2014). The environmental implications of land grabs, including the loss of biodiversity and regional air and water pollution, have attracted global concern, particularly because the environmental effects of land grabs are often transboundary and widespread, as demands for resources in one location trigger changes in resource use practices elsewhere and disrupt wider food production systems (Lambin and Meyfroidt 2011; Cotula 2012; Meyfroidt et al. 2013; Rulli et al. 2013; Davis et al. 2015; Cramb and Curry 2012; Varkkey 2012). Rice production systems have recently become increasingly threatened by the effects of climate change, a wild card in the region, as a large portion of the rice-growing areas are located in especially vulnerable regions: deltas and coastal lowlands. A number of countries have experienced a gradual stagnation in production levels. In the Philippines, farmers have found it more difficult to maintain rice production levels because they can no longer depend on seasonal rainfall to irrigate paddy fields and have to pump groundwater onto the fields, with negative financial implications. New dams have contributed to water shortages and soil degradation, so that food security becomes a moving target. More adequate land and water governance is crucial with greater demands on uncertain resources. The establishment of national parks has not always sequestered land from use and misuse as encroachment across their boundaries has been substantial. Management plans are often ineffective and ignored by farmers (Duangjai et al. 2015). Alongside forest depletion, this has also meant the loss of biodiversity and conservation areas, reduced potential for adequate watershed management and the increased significance of downstream floods.
Social and environmental implications of capitalist land relations

Amidst the changing context of rural livelihoods, displacement of rural households and proletarianization of labor in resource-rich developing countries has been problematized particularly with the expansion of land grabs across the region, which enable private investors and state authorities to expand agricultural horizons. This section therefore examines the implications of emerging capitalist land relations.

As smallholder farmers expand commercial agricultural activities, alongside the state authorities and large-scale investors, new capitalist land relations are emerging throughout Southeast Asia. Smallholders across Southeast Asia are devising various strategies to adapt their livelihoods simply to survive (Hall 2011; Suhardiman et al. 2015). Financial capital and political connections enable households to position themselves to benefit from the use of their land, whereas households without access to land, finance and connections are often forced off their land and marginalized, or forced to sell their labor to maintain their livelihood. The spread of capitalist land relations is far from allocating resources equitably and promoting efficient use of land, but rather producing land scarcity and entrenching already vulnerable population groups into greater destitution, while customary land sharing practices succumb to private ownership of land (Li 2014a, 2014b).

Strategies to survive intensive competition for land depend on smallholders’ existing assets, including political and economic assets. In Laos, for example, households with access to larger agricultural land areas were more easily able to survive land grabs and participate in commercial agriculture, while poor farmers were exposed to market risks and pushed out of agriculture (Suhardiman et al. 2015). Both the relative decline of agricultural income and the improvement of communication networks across the region have triggered the greater mobility of rural populations to engage in off-farm activities both domestically and internationally in order to diversify livelihoods (Rigg 2001, 2006; Kelly 2011; Rigg and Vandergeest 2012). Larger and richer households have disproportionately benefited from this, contributing to new inequalities at village level (e.g., Runmanee 2014; Thulstrup 2015; Martin and Lorenzen 2016). That has often been paralleled by urban expansion displacing some valuable agricultural land, and both necessitating and encouraging alternative livelihood choices, that older farmers especially are unable to take advantage of (e.g., Kelly 2000; Nguyen et al. 2016) and causing substantial conflict around cities like Ho Chi Minh City (Labbé 2015). With urbanization, the area available for rice paddies is decreasing. Some 50 percent of irrigated cropland in the Philippines has already been lost to urban development. Substantial annual losses have also occurred in Thailand and in Indonesia (Lorenzen 2015).

Although migration and engagement in non-agricultural livelihoods is an integral livelihood strategy for many rural households in Southeast Asia, most people are not entirely moving out of agriculture, but undertaking pluri-active and multi-local strategies (Elmhirst 2012; Rigg and Vandergeest 2012; Cole et al. 2015). In some places, as on the Thai-Lao and Thai-Cambodian borders and for Indonesians in Malaysia, migrants are obtaining higher incomes even in agricultural employment across borders, so contributing to the persistence of smallholder agriculture and the profitability of larger schemes (Estudillo et al. 2013; Runmanee 2014; Rigg and Vandergeest 2012; Rigg et al. 2016). Income earned outside the village is often used to maintain and sometimes expand agricultural activities on ever scarcer land (Elmhirst 2012; Kelly 2011; Rigg et al. 2016), but also to engage in service industries.

Urbanization and the growth of a middle class have diversified diets away from staple cereals toward the meat, fruit, vegetable and dairy products that wealthier urban consumers prefer (e.g., Reardon et al. 2015). This has resulted in new, intensified specialization and the growth of trade in once minority foods, such as tomatoes, in areas with good infrastructure and access
to large cities (Hernandez et al. 2015). Because food is often expensive in cities, and because of high demand for fresh agricultural produce, urban agriculture is a viable but marginal livelihood practice to supply urban food markets, through informal use of vacant sites and alongside urban waterways. Even Brunei and the city-state of Singapore, where over 80 percent of food is imported, have invested in intensive urban agriculture as a gesture toward food sovereignty. Nonetheless, food security is far from universal. As many as 20 million Indonesians are undernourished and many in other countries have limited access to food. Smallholders with less than 2 hectares of land, with limited access to technology, information and markets, form the bulk of the poor and food-insecure.

The future of agriculture, land and people in Southeast Asia

The problem of land raised by Schultz alludes to the increasing pressures on land and diminishing returns from land, and calls for the need to improve agricultural technologies and human capital to overcome the perceived threat of a Malthusian population trap. While diffusion of agricultural technology may have averted the problem of absolute food shortages, pressures on land and the problems of land degradation, distribution, access and scarcity remain of critical concern. More than 55 percent of the area of new agricultural land has come at the expense of intact forest areas in the tropical forest regions (Gibbs et al. 2010), and rapid clearance in Indonesia and Malaysia has brought a suite of negative environmental consequences, locally and regionally. Agricultural intensification and land use zoning in one country can trigger a series of changes elsewhere.

The agricultural frontier has continued to expand in Southeast Asia at the cost of forest, natural resources and the exclusion of the poor. Arable land expansion (and cropping intensity) are reaching their physical limits in many places, while urban growth, industrialization and the use of land for bio-fuels and livestock feed continue to take over lowland agricultural areas. The switch from rubber to oil palm in Malaysia and Indonesia has opened pathways for rural farmers, and a myriad of small and large investors have engaged in rubber plantations across the non-traditional rubber growing regions of mountainous mainland Southeast Asia. These changes have not only triggered a physical transformation of landscape, but have also intensified competition for land and produced problems of land degradation and scarcity across the region.

Emerging contestation over land in Southeast Asia occurs in the wider context of smallholder expansion of high-value crops, and their competition with other forms of land acquisition for food and energy crops, for dams and mines and growing urban areas (Rowcroft 2008; Hall 2011; Li and Fox 2012; Orr et al. 2012; Li 2014a; Leinenkugel et al. 2015; Friis et al. 2016). It can also be understood from a multi-scalar perspective indicating how processes of regionalization and globalization influence decisions to use and manage land, and whether the transformation of land and relationship with land is contributing to further social inequity.

Furthermore, pressures on land in Southeast Asia continue to intensify as urbanization and dams and mines expand, flooding, undermining and transforming agricultural land. Government efforts to promote industrialization in the upper Mekong Region have induced a cascade of effects on downstream farming and fisheries in Cambodia and the Mekong Delta region (Ziv et al. 2012; Orr et al. 2012). Intensified competition for land and water, particularly in mainland Southeast Asia, highlights the complexity of actors involved and the various actions taken to legitimize multiple claims to control resources (Suhardiman and Giordano 2014; Pittock et al. 2015). Intensified pressure on land has meant that rural areas no longer necessarily offer a safety net for migrants who return from the city (Li 2009).
Agriculture and land in Southeast Asia

Agriculture’s relative importance to national and household economies has diminished in Southeast Asia as the countries industrialize and achieve economic growth. However, agriculture is very far from obsolete, continues to play an important role in national economies and provides the basis of livelihoods for the majority of the population. The critical agrarian question of land, particularly how land is utilized to accumulate wealth, is still relevant in the twenty-first century Southeast Asia (Rigg and Vandergeest 2012; Fairbairn et al. 2014), particularly as land becomes increasingly privatized and commercial agriculture expands. Although penetration of the market economy and improved road access across Southeast Asia have enabled smallholders to participate in commercial agriculture and other non-agricultural economic activities, access to land continues to define and shape household wealth.

Improving agriculture and food systems to combat hunger and poverty remain high on the global development agenda (Griggs et al. 2013; Townsend 2015; United Nations 2015). The new 15-year global commitment to achieve sustainable development, enshrined in the Sustainable Development Goals (https://sustainabledevelopment.un.org/sdgs) not only focuses on producing more food and energy for the growing world population, but also promotes sustainable agriculture, in the face of climatic uncertainties, and equitable access to food and resources. That target is intricately related to concerns over land: overcoming increasing demand for and pressures on land, averting land and other natural resource degradation, and recognizing land tenure (United Nations 2015). Such concerns are pertinent in Southeast Asia, one of the fastest growing economic regions in the world, but one that is experiencing unprecedented rates of resource degradation.

An increasingly wide range of actors, from subsistence farmers, smallholders, investors, agribusiness corporations, national elites and state authorities, have become involved in the structural transformation of agriculture, and in agricultural intensification and land acquisition. Individually and collectively, interactions between actors affect what happens on the land, and are shaped by cultural, economic, physical and political factors. And these are ever changing; as Dayley and Sattayanurak state for Thailand: “The rule-makers who once exploited peasants now court modern farmers with guaranteed subsidies and pledges of state support” (2016, 65). Yet, in this neoliberal age it is unlikely that any subsidy or pledge of state support can be guaranteed. Commercialization of land and agriculture, at the same time as population growth, urbanization and de-agrarianization, constantly restructures local economies, geographies and social relationships. Various local, regional and global factors operate simultaneously, outcomes vary, and no single approach can resolve issues of land grabs and land degradation, access and exclusion, the increasingly inequitable distribution of land and growing concerns over food security. Understanding the role and significance of land for development thus demands a nuanced understanding of social transformations and the agency of various actors at multiple levels as they reshape notions of authority, livelihood, identity and citizenship.

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