Asia Research Institute
Working Paper Series No. 166

How Social is Socially Oriented Forest Tenure and Land Use Change in Bangladesh and Sri Lanka?

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October 2011

The **ARI Working Paper Series** is published electronically by the Asia Research Institute of the National University of Singapore.

Citations of this electronic publication should be made in the following manner: Author, "Title," ARI Working Paper, No. #, Date, www.nus.ari.edu.sg/pub/wps.htm. For instance, Smith, John, "Ethnic Relations in Singapore," ARI Working Paper, No. 1, June 2003, www.ari.nus.edu.sg/pub/wps.htm.

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INTRODUCTION

With the growing awareness that effective governance is the best strategy for forest conservation, at least 35 developing countries are officially engaged in promoting forest governance arrangements (Sunderlin, Hatcher, & Liddle, 2008). Under the Reducing Emissions from Deforestation and Forest Degradation Plus (REDD+) program of the United Nations, forests, as carbon storehouses, are an increasingly attractive asset for mitigating the terrestrial emissions associated with climate change. This perspective provides added incentive to conserve and sustainably manage forests in developing countries, particularly through innovative forest governance arrangements for enhancing carbon stocks. An immense body of literature on forest governance has been produced during the last two decades. However, there are major gaps in the existing knowledge about forest governance and how different governance features affect outcomes (Agrawal, 2007). For example, there is inadequate documentation and knowledge about the role of governance features such as collective action, local powers and accountability in participatory forest management for forest conservation (Lund, Balooni, & Casse, 2009). Another crucial feature of forest governance involves significant changes in forest ownership patterns (RRI & ITTO, 2009). In some cases, these changes entail the transition of land use to promote the commoditization of subsistence agricultural production under the patronage of governments and under the guise of forest policy reforms.

This article focuses on a lesser-known forest governance arrangement that confers private forest tenure to shifting cultivators and the rural poor. This arrangement entails market-driven land use change, from shifting cultivation–swidden or slash-and-burn cultivation to commercial rubber plantations in Bangladesh and teak plantations in Sri Lanka under the participatory forestry programs. These two South Asian countries share a similar history of forest management under colonial rule. Their current forestry programs are an offshoot of social forestry programs initiated in the 1980s and the socially oriented, participatory forest policies of the 1990s that endorsed forest tenure change in favor of the underprivileged.

In Bangladesh, approximately 5,000 ha of rubber plantations were established in the Chittangong Hill Tracts during 1985–2007 under the Upland Settlement Project (Nath, 2009). In Sri Lanka, approximately 15,500 ha of teak plantations were raised during 1993–1999 in 19 districts under the farmers' woodlot program (Wijewarnasuriya, 2009). This program continues in Bangladesh with an expanded scope to cover various regions. In contrast, the Sri Lankan program is now restricted to managing existing farmers' woodlots through extension and educational programs rather than creating new ones because of a paucity of suitable land.

The modus operandi of these programs in Bangladesh and Sri Lanka entails the leasing of small plots of state-owned degraded and/or encroached forestland and other categories of state land in the shifting cultivation areas to targeted landless and land-poor beneficiaries, including shifting cultivators, to raise commercial plantations/woodlots under the strict supervision of the state and with an assurance of inheritable land use rights. Despite granting private tenure, such forestlands remain in the broad category of "public lands" that are "designated for use by communities and indigenous peoples [and] set aside on a semi-permanent but conditional basis" (RRI & ITTO, 2009, p.

6). According to the official communications of the governments of Bangladesh and Sri Lanka, these programs are not termed as "leasehold forestry".[1] Hence, we avoid this phrase in this article.

A question that arises is why it is important to study this new forest tenure arrangement in Bangladesh and Sri Lanka. When new forest tenure arrangements that entail land use change, especially with commercial motives, bring shifting cultivation areas within their scope, the effect on outcomes is complex. There are unambiguous consequences to the livelihoods of shifting cultivators in the new social, economic and environmental circumstances. The literature shows that the consequences of rapid transformation from shifting cultivation to new land use systems, including conservation-oriented land use, are poorly understood (e.g., Henkemans, Persoon, & Wiersum, 2000; Mertz et al., 2009). More importantly, this land use transition—as in Bangladesh and Sri Lanka, the subjects of our study—demands attention because REDD+ can be a challenge and an opportunity for shifting cultivators in developing countries (Mertz, 2009).

This new forest tenure in Bangladesh and Sri Lanka, which entails the distribution of small forestland plots to beneficiaries, essentially amounts to "private ownership of forests" and generates a debate in the literature over the private ownership of forests. On the one hand, studies ascribing to the economic theory propose that enforcing property rights helps to correct market failures that cause resource degradation; therefore, private ownership of forests is an optimal solution for conservation and productive utilization in developing countries (Brooks & Heijdra, 1990; Johnson, 1972; Mendelsohn, 1994). Another proposition is to provide opportunities for poor people to grow trees on public lands and wastelands in developing countries by granting tree tenure, which is crucial for reducing the social deprivation (Chambers & Leach, 1989). On the other hand, some studies argue against private ownership of forests in developing countries on the grounds of higher transaction costs for enforcement and unfair distribution (Runge, 1986). Essentially, they argue that the presence of forests leads to a redistribution of income to the poor (Clarke, Reed, & Shrestha, 1993), and that incomplete markets can offset efficiency gains from privatization, even when the resource is equitably privatized (Baland & Francois, 2005). Kant and Nautiyal (1994) argue that small per capita forest areas in developing countries mean that too few individuals receive small parcels of forestland, leading to diffused private ownership and a loss of the area's significance as a forest ecosystem.[2]

The impact of programs introducing forest tenure and land use change in Bangladesh and Sri Lanka also demands attention in view of the failure of a similar program introduced in India. India's social forestry program in the 1980s included a tree *patta* (title) scheme in which small patches of degraded state land were allocated to landless and marginal farmers (with less than 1 ha landholding) or to the land-poor for subsidized tree farming. In this program, the focus was on commercial tree species such as eucalyptus. However, the government discontinued the program because of legal ambiguities arising from the fact that the program amounted to the privatization of the state (Sengupta, 2004), and because of the government's doubts about the political feasibility of granting

[1] The term "leasehold forestry" is explicitly used for a participatory forestry program implemented in Nepal to alleviate poverty, under which institutionalized small groups of poor households are leased patches of degraded forestland on the basis of collective responsibility (e.g., Thoms, Karna, & Karmacharya, 2006).

[2] While we do not underestimate the arguments against private ownership of forests, we cannot ignore factual realities. On the one hand, forests are being cut and encroached in developing countries to establish private title even when, in many cases, they remain uncultivated – the private storage of common property (Gaudet, Moreaux, & Salant, 2002). On the other hand, there are mixed outcomes of community tenure-based forest governance arrangements for improving forest conditions (e.g., Blomley et al., 2008; Conroy, Mishra, & Rai, 2002; Gibson, Williams, & Ostrom, 2005).

tree *pattas* only to the poor and landless (Theophilus, 2002).[3] One state government in India even tried to revive this scheme through amendments (Government of Andhra Pradesh, 1992). However, the Indian government disapproved of the scheme and instead suggested that the state government focus on Joint Forest Management, a participatory and community-based tenure arrangement that is the dominant forest governance arrangement in the country. Furthermore, given the ongoing trend in favor of community-based forest governance that supports greater access and control over forests by local communities in developing countries, and considering the dependence of more than half a billion people on forests for their livelihoods, and the total area under this management regime which is quite low (Agrawal, 2007), scholars and policy makers have become less likely to propose forest management by private actors as a matter of course.

However, the forest tenure arrangements in Bangladesh and Sri Lanka that entail the distribution of small forestland plots to private actors, the landless and the land-poor, are a rather unconventional approach to forest conservation. Their particular context calls for further study of this under-researched forest tenure arrangement.

This article first presents the development process and the circumstances that led to the implementation of private forest tenure in Bangladesh and Sri Lanka. It then examines the impact of private forest tenure in these two South Asian countries to answer the following question: How does private forest tenure under the ambit of socially oriented participatory/social forestry programs in Bangladesh and Sri Lanka realize the desired social well-being of forest-dependent people? This article is based on the results of two case studies, one from Sri Lanka and one from Bangladesh. The process of data collection is explained for both case studies. The article ends with a discussion and conclusions.

EMERGENCE OF PRIVATE FOREST TENURE

Bangladesh

Early initiatives in private forest tenure arrangement were undertaken in Bangladesh because of settlement efforts to rehabilitate internally displaced people and shifting cultivators by encouraging sedentary farming in the hills. In 1979, the *Betagi-Pomora,* the first community forestry project, was launched in the Chittagong Hill Tracts (CHT). This project granted landless families 1.62 ha of marginal or degraded government lands with inheritable land use rights and provided livelihood opportunities through the rehabilitation of the lands by planting forest trees and horticultural plants. In the early 1980s, the Forest Department undertook a settlement program for shifting cultivators in the CHT by allocating 2.02 ha of land per household in unclassed state forests (USF) with all land use rights. Around the same time, the Chittagong Hill Tracts Development Board (CHTDB) began a parallel rehabilitation program. In addition to these programs, the Forest Department created strip plantations and fuelwood plantations on barren public lands during the 1980s as part of the social forestry program.

However, most of these initiatives failed to achieve their stated goals of permanent settlement of shifting cultivators, development of horticulture for socio-economic development and ecological restoration of degraded hills. The reasons for failure include a lack of experience among officials, misappropriation of funds, and the beneficiaries' unfamiliarity with planting and tending trees on a

[3] Moreover, there were a number of administrative, institutional and technical setbacks to the tree *patta* scheme in India (Kant, 1992).

commercial basis and their inability to change their nomadic life style (Nath, Inoue, & Myant, 2005). Despite these problems, settling shifting cultivators on degraded state lands continues in Bangladesh. The most recent project of this type is the Upland Settlement Project (USP), which involves raising homestead agroforestry (also called home garden) and rubber plantations implemented by the CHTDB in shifting cultivation areas. We examine the USP later in the case study from Bangladesh. Another instance is the woodlot plantation program in the lowlands of Bangladesh.

In accordance with the trend in the early 1990s toward new policy initiatives to advance forest governance measures in developing countries to recognize the traditional forest rights of local communities (Balooni and Inoue, 2007), Bangladesh implemented a fresh forest policy in 1994 (which is currently in use) to encourage people's participation in social forestry (now called participatory forestry). While this policy emphasizes people's participation in forest rehabilitation and conservation, it also promotes private forestry and tree planting on forest and non-forestland, and endorses socially oriented private forest tenure by targeting the "rural poor", defined as those who are landless, owners or occupants of less than 50 decimals (0.2 ha) of land, or destitute women or ethnic minorities living around project sites (Bangladesh Forest Department, 2004). These targeted beneficiaries are identified by the Forest Department in consultation with local government institutions and NGOs.

In addition to shifting cultivation areas in uplands, the Forest Department is targeting degraded and poorly stocked sal (*Shorea robusta*) forests in the lowlands of Bangladesh for regeneration and conservation with the involvement of poor local residents through the woodlot plantation program. For example, under the Central Sal Forest Participatory Forestry Program in the 1990s, the Forest Department distributed 20,382 ha of deforested land to 18,940 beneficiaries (Salam, Noguchi, Koike, 2005; Salam & Noguchi, 2005a). Each beneficiary was allocated around 1.2 ha on a ten-year lease basis to plant and groom trees.

It is not only social goals that are behind the re-orientation of forestry programs in the 1990s and the promotion of home gardens, rubber plantations and woodlot plantations based on private forest tenure arrangements. A look at the typical forestry conditions in Bangladesh reveals the need for the government to bring about change. First, there are virtually no community forests in rural Bangladesh (Douglas, 1982). Second, the failure to protect forests from large-scale encroachment and pilferage is probably the chief weakness of forest management in Bangladesh (Millat-e-Mustafa, 2003). In the upland forests, in addition to encroachment by the locals, migrants, pushed by political and ecological forces (such as cyclones and floods), exacerbate the problem of encroachment (Iftekhar & Hoque, 2005). In the lowland forests, popularly known as sal forests, the high density of the surrounding population perpetuates forestland encroachment (Alam, Furukawa, & Harada, 2010). Under these circumstances, the participatory forestry programs in Bangladesh actively involve land encroachers and other local inhabitants as stakeholders (Muhammed et al., 2008). In the past, the Forest Department had failed to protect these forests due to hostility from local people. An added advantage is that such programs help to mitigate the fuelwood shortage and thereby conserve the relatively less degraded natural forests nearby.

Thus, participatory forestry based on the allocation of encroached forestland to the rural poor is a governmental strategy to mitigate illegal forest encroachment. The strategy is evident from the government's attention to conserving classified and Forest Department-managed forestlands (1.52

m ha) that are also critically degraded and facing pressure.[4] However, these lands have been restricted from participatory forestry for conservation (Salam, Noguchi, & Koike, 2000).

Allocating degraded forest and non-forestland to the rural poor, a process that began in the late 1970s to settle shifting cultivators and empower the poor by conferring land tenure, currently constitutes the core of the participatory forestry program in Bangladesh. However, there is a need to pay attention to the new emphasis on commercial plantations, such as rubber plantations in the CHT/uplands and other commercial tree plantations in the lowlands of Bangladesh (Alam, Furukawa, & Harada, 2010; Kabir & Webb, 2005; Muhammed et al., 2008; Salam, Noguchi, & Koike, 2000).

Sri Lanka

The social forestry program in Sri Lanka began in the early 1980s, when the Forest Department implemented an Asian Development Bank (ADB)-funded community forestry project in five districts to augment the fuelwood and timber supply for subsistence and market needs. The components of this project included private farmers' woodlots, block fuelwood plantations of fast-growing tree species and community woodlots near settlements. At the same time, other projects promoted home gardens on private lands. Tree plantation was an important phenomenon during the 1980s, but this initiative failed to involve people, even though approximately 5,600 ha were planted for fuelwood alone (De Zoysa, 2002). Private farmers' woodloots achieved success, measured in terms of people's active participation in tree plantation activities, but the community woodlots component failed (Forestry Planning Unit, 1995) due to false assumptions, including fuelwood shortage (Carter, Connelly, & Wilson, 1994). The reality in most villages in Sri Lanka is that fuelwood is available from village forests, home gardens, rubber, tea and coconut plantations, and agricultural residues (De Zoysa & De Silva, 2002).

In 1993, under another ADB- and AusAid-funded participatory forest project, the Forest Department implemented four different land use models to promote tree plantations on degraded land. One objective was to target rural poverty, a well-considered strategy to successfully involve rural people in plantation activities, a lesson policy makers had learnt from the drawbacks of previous projects. The first model focused on establishing home gardens, but offered few incentives to beneficiaries. The second model involved developing farmers' woodlots on degraded village lands leased for 25 years with a secure tree tenure, free inputs, and food stamps during the initial years while encouraging inter-cropping. This latter model was the most successful model, particularly in dry zones, where the Forest Department promoted the *taungya* system for raising teak plantations (MacKenzie, 1998). This model also helped to contain shifting cultivation (*chena/hena*) (Forestry Planning Unit, 1995). The Forest Department undertook the third model, which involved establishing protective woodlots, in environmentally vulnerable areas inside forest reserves. Beneficiaries were given three-year contracts but no tree tenure. They were to benefit only by cultivating crops in the initial years of tree plantation and by collecting non-timber forest products (NTFPs) from raised plantations, which offered them little motivation. Another model consisted of miscellaneous planting, including strip plantations. This model suffered from a lack of motivation because the only incentive was food stamps.

[4] The total forestland in Bangladesh includes Forest Department-managed classified forests (1.52 m ha), unclassified state forests (0.73 m ha) and village forests (0.27 m ha) (<http://www.bforest.gov.bd/land.php> accessed May 2, 2011). The first two categories are not necessarily areas with forest cover; rather, they signify an administrative category.

The secure tree tenures in the farmers' woodlots program contributed to its success and its establishment in Sri Lanka. New market-oriented forest policies further strengthened the farmers' woodlots program. The 1995 National Forest Policy emphasized people's participation in forestry through partnerships with non-state-sector stakeholders. While focusing on conservation and sustainable development, this policy underlines enhancing the forestry sector's contribution to rural welfare with specific attention to social equity and to promote wood-based industry to strengthen the national economy. The policy advocates the "establishment and management of industrial forest plantations on state lands" by involving "local people, rural communities, industries and other private bodies" (Forestry Planning Unit, 1995, p. 5). Thus, the new policy initiatives encouraged the commoditization of the forestry sector, as is further evident from a policy document stating that the management of state plantations would be leased to organized local people and that further lease conditions would follow private property characteristics – transferable, inheritable and bankable (Forestry Planning Unit, 1995). Simultaneously, the Forest Department initiated policy interventions that allowed the free price formation of wood to make markets competitive (FAO, 1997) in conjunction with the economic reforms in Sri Lanka.

What if the degraded state land leased for raising woodlot plantations were not erstwhile village forests? Long ago, village communities in Sri Lanka were organized, and village forests were integral to villages (De Zoysa, 2002). Forests were managed according to conventions; social obligations prevented misuse. These informal arrangements declined during colonial rule as people's forest rights were restricted. A large proportion of forests were lost to commercial exploitation, which continued after independence. Nevertheless, village forests legally existed in Sri Lanka during colonial rule (Hewage, 1998; Troup, 1940). After independence, a significant part of village forests disappeared. The area of lost forest rose from 1 m ha in 1956 to 1.2 m ha in the late 1980s (Bogahawatte, 1997), as people encroached on the forests for shifting cultivation or developing agricultural lands. Thus, village forests disappeared due to land alienation, encroachment, and shifting cultivation in Sri Lanka (Bogahawatte, 1986). The remaining deforested village forestlands are leased to people under farmers' woodlots and other tree plantation programs. As advocated by the 1995 policy, these programs intentionally target landless and land-poor people. It is obvious that the farmers' woodlots program is a means to recover the encroached forestland because the current conservation-oriented policies suggest addressing its encroachment by shifting cultivators (Ariyadasa, 2002). Later, as the case study reveals, the Forest Department maintained a firm grip on this program.

RESULTS

Case Study from Bangladesh

This section describes the results based on a case study of the Upland Settlement Project implemented in the Chittagong Hill Tracts (CHT) in Bangladesh. Eleven groups of ethnic communities – the targeted beneficiaries of USP – inhabit this region, comprising three forested hill districts. The government policies regarding the reservation of forest areas, the in-migration of lowland people to the CHT, and the construction of a hydroelectric dam that submerged agricultural land, adversely impacted the lives of tens of thousands of these ethnic people. A majority (90%) of them practice shifting cultivation (*jhum*). The burgeoning population and lack of suitable agriculture land, however, has forced ethnic people to shorten the fallow period, diminishing productivity and affecting their livelihood.

Taking a cue from various development programs implemented in the CHT, the government of Bangladesh launched a multi-sectoral program in the CHT to improve the living conditions of the ethnic people and enhance the forest cover. The Upland Settlement Project was one component of this program, implemented in two phases between 1985 and 2007. The ADB and the government funded the first and second phases, respectively, and the state-sponsored Chittagong Hill Tracts Development Board (CHTDB) implemented the program. This program resulted in settling approximately 3,000 ethnic families, and establishing 2,126 ha of home gardens and 4,860 ha of rubber plantations on government-owned degraded forestland in 59 villages in the Khagrachari and Bandarban districts in the CHT. Given the political unrest in Khagrachari district, this case study was restricted to Bandarban district. This study is based on a survey of two project villages, Chemi-1 (48 families) and Kohalong-2 (38 families) in the Bandarban district. These villages share the socio-economic conditions that are typically prevalent in shifting cultivation areas of the CHT. The project villages differ mainly in terms of the stock of rubber plantations established during the Upland Settlement Project. This case study focuses on the socio-economic characteristics of the beneficiaries, including their landholding pattern and livelihood in "before"' and "after" project scenarios, the condition of the home gardens and rubber plantations, the role of beneficiaries and the CHTDB, and the diverse reasons for the success or failure of the home gardens and rubber plantations. We collected data through interviews with half of the beneficiaries in each village and key informants, as well as through group discussions with the beneficiaries. We also interviewed CHTDB officials.

Each beneficiary family was allocated 2.1 ha degraded forestland (*khas*), 0.5 ha for raising a home garden and 1.6 ha for a rubber plantation. This land was under shifting cultivation prior to project implementation. The beneficiaries built their homes in the middle of the home garden plots and raised multi-strata vegetation around them. This is a typical feature of traditional agroforestry in tropical areas in developing countries and provides some degree of livelihood security. However, this was not the case with another project component. Instead of each beneficiary raising a rubber plantation on the allocated plot, the project agency raised plantations in a block by pooling together the share of allocated plots. This was a strategy of the project agency to provide financial, technical and material support for the plantations in order to achieve financial feasibility and monitor the plantations effectively. The beneficiaries' involvement in planting rubber is limited to providing wage labor; they have no stake in the decision-making process, which contradicts the spirit of participatory forestry. It would be correct to say that restricting the participation of beneficiaries to wage labor hampers the sustainability of the plantations. It is logical that this arrangement for managing the planting of rubber failed to inculcate a spirit of collective action.

According to the project plan, after compensating all management costs, the beneficiaries were entitled to the remaining revenue from the rubber sales. This provision unambiguously illustrates the project agency's hold over decision-making; the government empowered officers to make most decisions. This case study is not an isolated incident. Another example is Bangladesh's Forestry Sector Project, which advocates the Forest Department's supervision and implementation of thinning, final harvesting, product sales, and distribution of benefits (Bangladesh Forest Department, 2004). A number of studies (e.g., Nath & Inoue, 2010; Salam & Noguchi, 2005a; Salam & Noguchi, 2005b) in recent years report the insignificant role of the beneficiaries in project activities in other social forestry projects in Bangladesh. Our finding that beneficiaries in the case study villages have not received legal land titles for the allocated plots, more than a decade after the project's implementation, supports the above concern. The beneficiaries suggested two reasons for this delay. The first reason is the most familiar accusation in this part of the world: administrative problems. The other reason, however, is of a more serious nature. In the Upland Settlement Project, the project agency initially planned to provide a legal land title to each beneficiary for the home garden (0.5 ha) as well as her/his share in the rubber plantation (1.6 ha). The manager of the Upland

Settlement Project revealed to us that the project agency later realized that, according to the land allocation policy in the CHT, the government cannot distribute more than 5 acres (2 ha) of land to one beneficiary family. Given this policy, the project agency intends to provide individual land titles for home gardens and collective land titles for the rubber plantation to all the beneficiaries in a project site. However, this issue remains unresolved. One outcome of this administrative lapse is that the beneficiaries are reluctant to cooperate in rubber plantation management. According to the project plan, the beneficiaries would get back land after 40 years of rubber plantation. However, there is no prospective plan for plantation management or any other potential land use plan after the conclusion of the project. Furthermore, there is a threat of neighboring people from lowland areas encroaching on home garden plots in the absence of legal land titles.

The findings reveal unequal landholdings among the beneficiaries (average landholding: 2.7 ha, range: 2.1 ha to 7.63 ha), which clearly contradicts the project's objective to target landless people as beneficiaries and restrict the land disbursement per beneficiary to a maximum of 2.1 ha. The landholding pattern indicates that the project agency selected some better-off landholding families as beneficiaries and excluded some landless families. A committee consisting of project officials, the Sub-District Officer, the Settlement Officer, the chairperson of the local government council, the headman, and the village leader (*Karbari*) made the selections of the project beneficiaries. The local elites, however, influenced the decision-making process by favoring their relatives. Rapid project implementation provided many opportunities for the local elites to dominate the decision-making process.

Nonetheless, the outcomes of the project are mixed. There has been a reasonable reduction in the intensity of shifting cultivation. Before the project's implementation, 70% of the beneficiaries practiced shifting cultivation on degraded forestland. Subsequently majority of them (77%) gave up shifting cultivation. The unavailability of suitable agricultural land and the absence of alternative livelihood options compel the rest of them to continue shifting cultivation. In fact, a few beneficiaries even resort to shifting cultivation on rubber plantations, and some collect NTFPs from forests. Initially, the project created employment by involving beneficiaries as wage laborers to raise home gardens and rubber plantations. However, these plantations have not created substantial employment in subsequent years. The project created employment opportunities for a few beneficiaries through experimental latex collection, and a few others who acquired the technical skills of planting and tapping rubber trees found jobs in neighboring rubber plantations.

In addition to home gardens or homestead agroforestry and rubber plantations, the project agency built earthen dams that supply water year-round in the project villages under the Upland Settlement Project. The beneficiaries use the dam water for aquaculture and household chores. Pitch road networks were also built to connect all project villages with the main road, which helps the local population to access the market and take up jobs in small-scale industries. This project has also paved the way for the entry of several NGOs with an interest in diverse developmental activities. A few beneficiaries have diversified their livelihood options and have augmented their income. Consequently, there are perceptible changes in their socio-economic indicators, such as an increase in the enrollment of their children in primary schools, high schools, and even colleges. Predominantly, however, many beneficiaries continue to live hand to mouth.

Nevertheless, the tree cover has increased in the case study villages and enhanced soil fertility. Home gardens with timber (beachwood or white teak, teak, mahogany, jackfruit), fruit species (mandarin orange, plantain, guava, mango) and vegetables grow vigorously. The project agency provided beneficiaries with tree seedlings of several species to establish home gardens, but it failed to give beneficiaries seedlings of their choice. Subsequently, the beneficiaries employed their own resources to arrange seedlings, mostly indigenous and multi-purpose tree species, according to their

needs. This approach was effective; there are more than 26 different plant species in the home gardens, and, on average, there is a growing stock of more than 710 trees per ha in both villages. However, small-sized home gardens cannot ensure sustainable livelihood security for growing families. In contrast to home gardens, the condition of rubber plantations varied in the case study villages. In Chemi-1 village, 90% of the planted rubber trees are growing satisfactorily, whereas in Kuhalong-2 village, this number is only 30–40%. Due to this difference in conditions, the project authority began collecting latex in Chemi-1 in 2005, while latex collection commenced in Kuhalong-2 at the end of 2008.

This difference in the outcome of the two project components, home gardens and rubber plantations, is primarily traceable to management arrangements. In the former case, the beneficiaries manage their share of allocated land. In the latter case, a block of each beneficiary's share of allocated land is managed under the supervision of project officials who do not organize or motivate the beneficiaries to contribute to the upkeep of the plantations.

Despite the reduction in the extent of shifting cultivation that is confined to project villages, in general, commercial rubber plantations have not significantly contributed to ensuring sustainable livelihoods for the poor. In fact, the marginal gains from the home gardens and rubber plantations combined together, when separated from the effect of other multifarious development activities in the case study villages, virtually disappear.

Case Study from Sri Lanka

We undertook a case study of farmers' woodlots program in the Mahawa Forest Range in the Kurunegala Forest Division of the Northwestern Province of Sri Lanka, which pioneered the implementation of this program in the country. This case study focuses on woodlot plantations established in 1996 in Agara Uda and Thalakolawewa villages in the Mahawa Forest Range, where 35 ha of degraded forestland was allocated to 66 beneficiaries. Generally, the allocated forestland varies from 0.4 to 1 ha per beneficiary in Sri Lanka. The case study specifically examines a sample of 50 beneficiaries from Agara Uda (17) and Thalakolawewa (33); the analysis of the sample was ultimately restricted to 48 beneficiaries. We collected information about the socio-economic characteristics of the beneficiaries, including landholding patterns, details of woodlots (including trees on the allocated land before and after the establishment of woodlots), the criteria for the selection process of beneficiaries, benefits from woodlot plantations, and factors in the success or failure of woodlots. We held discussions with frontline Forest Department officials and senior officials in the Ministry of Environment and Natural Resources, Colombo.

The population in Kurunegala consists of one ethnic group, namely, Sinhalese. Agriculture is the mainstay of the region's economy, and paddy is the predominant crop. Local people often work as laborers during the lean season when faced with water scarcity. Comparatively, there is a high incidence of poverty in this dry zone. The forests in Kurunegala fall into three categories: natural forest, plantation forest and farmers' woodlots (257 ha). The Forest Department promoted extensive plantation (90–95%) of teak (*Tectona grandis*) in the farmers' woodlots, as in the rest of Sri Lanka. The climatic conditions in this region are conducive to growing teak. The Forest Department promotes good quality teak saplings to increase timber production on degraded forestlands in accordance with the new forest policy and certainly for ecological reasons. The beneficiaries have no choice of tree species, but they make use of tree-based agricultural management systems.

A majority of the beneficiaries (94%) stated that the forestland previously allocated was encroached upon for shifting cultivation. About half the beneficiaries held fellow villagers responsible, although approximately one-fourth admitted to practicing shifting cultivation. However, this situation does

not prevent the rest of the beneficiaries from being labeled shifting cultivators. Despite benefitting from the woodlots program, three of the beneficiaries admitted to continuing shifting cultivation to ensure sustenance of their livelihood. The prevalence of shifting cultivation before the establishment of the woodlots suggests that some natural regeneration continues. The survey revealed that, on average, there were 566 naturally growing and planted trees per hectare. In addition to teak, neem (*Azadirachta indica*), an indigenous species, was planted in woodlots. The beneficiaries realized that intercropping of trees and field crops would not be possible in monoculture teak plantations, and therefore they preferred mixed plantations of teak and neem. The beneficiaries undertook intercropping during the first three to four years, and a few (9) continued thereafter. The agroforestry intercropping system in farmers' woodlots is quite prevalent in the dry and intermediate zones of Sri Lanka, which helps to stabilize the fragile ecosystems of degraded forestlands (De Zoysa, 2010).

Are the poor and landless the genuine beneficiaries of the farmers' woodlots program? The beneficiaries' legal landholding data (excluding encroached forestland) revealed only two beneficiaries who were previously landless and worked as sharecroppers and who continued to do so. There were some land-poor (< 0.5 ha) beneficiaries (11). The extent of the landholding of other beneficiaries varied: 19 owned between 0.51 and 1 ha, 10 owned between 1.01 and 2 ha, and 6 owned more than 2 ha. The maximum landholding was found to be 2.53 ha. Each beneficiary was allocated 0.5 ha in Thalakolawewa and 0.6 ha in Agar Uda. A very high correlation coefficient (0.95) between the beneficiaries' landholding size before and after the execution of the woodlots program indicates an equal distribution of forestland. However, this data shows that people other than the landless and land-poor also benefited. One explanation is that the poor—specifically, the landless—have no customary land rights to forestland that has gradually been encroached upon by relatively better-off people for shifting cultivation. This probably leads to the exclusion of the poor.

The forestland allocation process supports the above interpretation. In consultation with the Village Administrative Officer, the Forest Department identifies 20–40 ha forestland in the village vicinity for the woodlots program. Generally, this process excludes locals to pre-empt difficulties because reference to encroached forestland is a sensitive issue in rural Sri Lanka. After earmarking forestland, the Forest Department calls a village meeting to introduce this program. This program usually excludes new settlers, as we found in Agara Uda, which has ten such families. The Forest Department selects beneficiaries primarily based on their landholding size, number of family members, and annual income, as well as whether they have been practicing shifting cultivation in the earmarked forestland. Only two beneficiaries, who were previously landless, pointed out that better-off people benefited more from the woodlots program. A majority of the beneficiaries indicated that the selection process was transparent and lacked intervention from the local elites or politicians. This is also an indication of mistrust between the landless and the majority. The selected beneficiaries discuss the modus operandi for the distribution of allocated forestland between themselves rather than the Forest Department, which plays a passive role, because the program necessitates a redistribution of encroached forestland. This situation paves the way for the local elites to dominate.

Other studies (FAO, 2003; Jorgensen & Vivekanandan, 2003) highlight the exclusion of the poor by reporting that the poor generally do not benefit from the woodlots program because of limited land availability. One senior Forest Department official (name withheld) expressed skepticism about the program, suggesting that it often benefits better-off people rather than the poor. In fact, the failure to benefit the poor along with a paucity of land are the reasons that the woodlots program was not expanded in Sri Lanka after 1999. There is also concern that the traditional usufruct rights to such forestlands used for shifting cultivation that have been enjoyed by the local communities for generations have been gradually eroded through government control (Ariyadasa, 2002). It is obvious

that the woodlots program, implemented under the strict direction of the Forest Department, leads to the termination of the traditional usufruct rights of those excluded. In the study sites, almost half the beneficiaries reported that those excluded from this program create trouble because they are not satisfied with the land allocation and according to them, this scenario was expected. The Forest Department failed to envisage such an inevitable scenario during the conceptualization of the woodlots program. In any case, to please the have-nots, all but six of the beneficiaries allow these fellow villagers to collect fuelwood from their woodlots.

Returning to the forestland allocation process, in Agara Uda, those who practiced shifting cultivation were allocated the same piece of forestland. If the allocated forestland was less than the actual forestland under shifting cultivation, the beneficiary had to relinquish excess forestland. In Thalakolawewa, a local farmers' organization played the role of mediator. Unlike the rubber plantation program in Bangladesh, there was no attempt to pool the allocated land of each beneficiary to raise one large block of teak plantation.

We asked the beneficiaries to indicate the criteria for their selection. One-third of the beneficiaries stated that their selection was based on their small landholding size, and 27% mentioned that they lived near allocated forestland. The Forest Department was eager to reduce the distance between the allocated land and the houses of the beneficiaries to better manage the woodlots. Only a few beneficiaries (10%) stated that they were allocated land because they were practicing shifting cultivation. We also asked the beneficiaries to indicate their motivation for joining the woodlots program. The main motivation, mentioned by 73% of the beneficiaries, was to enlarge their private landholding. One-third of the beneficiaries revealed that environmental amelioration, particularly water conservation, was a motivating factor. When introducing the program, the Forest Department emphasized soil and water conservation. This response from the beneficiaries can be attributed to their heavy reliance on rain-fed agriculture. Furthermore, nearly half the beneficiaries revealed that food aid provided by the Forest Department for the use of family labor to establish woodlots was a motivating factor. Only a few beneficiaries, who did not have a home garden, revealed that meeting their household demand for fuelwood and timber was a motivating factor. Most of the beneficiaries (35) with landholdings of more than 0.5 ha owned a home garden; overall, home gardens constituted 32.5% of their total landholding (53.15 ha). This suggests that beneficiaries are not dependent on the forest for their fuelwood and timber requirements. Raising livestock is uncommon in this region. The beneficiaries perceive the forest as a means of expanding agriculture and house construction, a situation necessitated by the burgeoning population (De Zoysa, 2002; Bandaratillake, 2001) and a reason for the loss of natural forests in Sri Lanka.

Certain conditions accompany the new forest tenure arrangement produced by the woodlots program. First, the Forest Department provides forestland to the beneficiaries on a lease basis. To implement this situation, beneficiaries sign an agreement with the Forest Department. A majority (two-thirds) of the beneficiaries knew that forestland was granted on a lease basis. An ADB (2003) report evaluating a participatory forest project in Sri Lanka criticized the arrangement because the level of ownership by the beneficiaries is low, partly due to the inability of the Forest Department to issue secure titles for the woodlots. This case study did not explicitly reveal this concern; however, an agreement between the beneficiaries and the Forest Department provides sufficient opportunities to the latter to regulate the allocated land. A beneficiary needs to ensure success in rehabilitating allocated land because the continuity of land rights is subject to the beneficiary's adherence to the program's objectives. A beneficiary cannot transfer land rights without the permission of the Forest Department; otherwise, the agreement is cancelled. However, there is a provision through which a beneficiary can appoint a nominee. During the first five years of the agreement, renewal is on an annual basis; thereafter, renewal occurs once every five years for 25 years and is extendable for the next 25 years. It is apparent that beneficiaries have land use rights.

However, the Forest Department regularly monitors the commercially valuable teak woodlots through its village-based extension officers. Furthermore, according to the forestry law in Sri Lanka, anyone harvesting trees on private land must seek prior permission from the Forest Department.

Even after ceasing the creation of new farmers' woodlots in 1999, the Forest Department continued to take an interest in the management of woodlots because the income accruing from timber, especially the commercially valuable and highly sought-after teak timber, would be shared between a beneficiary and the Forest Department at a 75:25 ratio. During the 1980s and the early 1990s, the Forest Department gave farmers with rights all the timber produced in a woodlot to encourage farmers' participation. In 1993 and 1999, the Forest Department came up with a benefit-sharing arrangement, with its share at 25% of all the timber produced on a woodlot.

In fact, beneficiaries expect high income from woodlots. According to the data provided by 46 beneficiaries in the two case study sites, on average, a woodlot is worth USD 1,862 (i.e., USD 3,373 per ha). Nineteen beneficiaries reported an increase in their social status in the village because of valuable woodlots. A related reason that the Forest Department is interested in the management of woodlots is the reluctance of beneficiaries to undertake silvicultural operations. Most mixed plantations of teak and neem in Agara Uda give the appearance of overcrowded woodlots, and almost one-half of the beneficiaries did not undertake the thinning of plantations. The Forest Department officials stated that the beneficiaries assume that thinning leads to a loss of tree growth; this is a major challenge for the success of woodlots. The Forest Department often sets deadlines for the thinning of trees after cautioning the beneficiaries that the agreement will stands cancelled in case of noncompliance. The Forest Department even provides an incentive of USD 37 to each beneficiary once in the first eight years to undertake thinning, but without much success. The commercial motive of the Forest Department is obvious from these interventions.

Water scarcity in this region is also a limiting factor for the program. A substantial number of beneficiaries (30) undertook soil and water conservation measures. The beneficiaries want the Forest Department to provide agro-wells, but the Forest Department has no funds earmarked. The Forest Department is concerned that agro-wells would cause beneficiaries to prioritize agriculture rather than forestry. We found these fears are factual; more than half the beneficiaries revealed such a plan. A few beneficiaries (12) revealed that home gardens are a better option than woodlots. To allay these fears, the agreement between the Forest Department and the beneficiary categorically states that the latter should not use allocated forestland for any activity not approved by the former. It is apparent that the Forest Department sees an opportunity in the farmers' woodlot program to bring back forests through beneficiaries by conferring land rights on a lease basis within their strict control.

DISCUSSION

The development process of the new forest tenure arrangement that leads to changes in land use in shifting cultivation areas in Bangladesh and Sri Lanka has differed. The first settlement programs in shifting cultivation areas of Bangladesh’s Chittagong Hill Tracts (CHT) entailed the provision of secure land tenure through the allocation of small plots of degraded forestland and other state land to ethnic and internally displaced people. Over the years, however, the Forest Department has restructured such livelihood-oriented programs implemented in different parts of Bangladesh into commercial plantation programs under the ambit of participatory forestry. These programs are not confined to shifting cultivation areas but have been expanded to other parts of Bangladesh facing forest degradation and encroachment.

In Sri Lanka, the context of the development of private forest tenure is different. The donor-driven farmers' woodlots experienced relative success. These woodlots included the provision of secure tree tenure, providing an advantage over other tree plantation components of the social forestry program that were implemented to augment fuelwood and timber supply during the 1980s in Sri Lanka. This success resulted in the promotion of this plan during the 1990s as a forest rehabilitation strategy. However, unlike Bangladesh, where a complementary component of the program includes raising traditional home gardens or homestead agroforestry on a small part of the allocated forestland, there is an explicit state-driven and market-oriented focus on commercial teak plantations in the farmers' woodlots program in Sri Lanka. This program could not sustain in Sri Lanka after 1999 due to the paucity of land. Nevertheless, the governments' motivations to reform forest policy by targeting shifting cultivators and the rural poor in Bangladesh and Sri Lanka through the creation of private forest tenure are debatable on many grounds.

The degraded forestland and other state land allocated under participatory forestry programs were shifting cultivation areas, as the case studies show. In fact, the study regions are historically known for shifting cultivation. The governments categorize this forestland as degraded and encroached and the local people dependent upon it as poor and landless, with no recognition of their customary land rights. Therefore, new forest tenure arrangements in Bangladesh are crucial to aid socio-political stability in the CHT because of the history of struggle for the recognition of ethnic identity (Ahmed, 2002; Rasul, 2007; Roy, 2002). The collective name for the twelve ethnic groups from the CHT is *jumma,* meaning shifting cultivators (Ahmed, 2002), which explicitly identifies ethnic people in this region with shifting cultivation. In this context, the forest policy reforms initiated in Bangladesh and Sri Lanka during the 1990s unequivocally endorsed the promotion of the socially oriented new forest tenure arrangements by facilitating tree plantation programs to uplift the subjugated population identified as beneficiaries by the state. However, these interventions are not uncommon. There is increasing recognition that the ongoing forest governance arrangements in developing countries intend to enhance the social, economic and cultural wellbeing of the local people (Agrawal, 2007; RRI & ITTO, 2009). However, the findings show that the realities in Bangladesh and Sri Lanka contradict the policy intentions.

First, the case studies clearly show that not only the poor – the intended beneficiaries – but also better-off people benefit from these programs, as is common in community-based forest tenure programs (Balooni et al., 2010; Iversen et al., 2006; Thoms, 2008). It is obvious that the land distribution process is a function of government agencies in Bangladesh and Sri Lanka. However, the people who are better-off and the customarily recognized shifting cultivators make the call. On the one hand, government agencies leave this process in their hands. On the other hand, the agencies want to reduce transaction costs and redistribute shifting cultivation areas in a consensual manner. This situation perpetuates the exclusion of poor inhabitants, as the case study from Sri Lanka explicitly demonstrates. This situation explains why, in addition to the paucity of suitable land, the farmers' woodlot program was not extended beyond 1999 in Sri Lanka, and it implicitly validates India's rejection of the tree *patta* (title) scheme (Kant, 1992; Sengupta, 2004; Theophilus, 2002).

Second, the case studies reveal that even after the implementation of participatory forestry programs for more than a decade in Bangladesh and Sri Lanka, the beneficiaries have yet to be granted secure land titles. This was especially evident in the case study from Bangladesh, particularly in the second phase of the Upland Settlement Project. This situation is mostly attributed to administrative delays and overlapping policies. In Sri Lanka, the beneficiaries of farmers' woodlots program have entered into a 25-year land lease agreement with the Forest Department. However, this land title comes with numerous restrictions, including the requirement that the beneficiaries must ensure the successful rehabilitation of the allocated state land, specifically by raising commercial teak plantations, which is within the ambit of the program's objectives. Monitoring

mechanisms are instituted through the active involvement of front-line Forest Department staff. It is expected that the management rights to locally managed forest resources in developing countries can be taken over by higher authorities if the management does not meet the silvicultural and environmental criteria specified in national legislation and/or management plans (Lund, Balooni, & Casse, 2009). In the case of the Upland Settlement Project in Bangladesh, the allocated land would be returned to the beneficiaries after 40 years of rubber plantation. However, unlike Sri Lanka, the beneficiaries in Bangladesh are not well informed about the lease conditions. The beneficiaries merely provide wage labor.

The state's introduction of strict lease conditions and a bureaucratic top-down control over commercial plantations is intended to realize a positive cash outflow through a benefit-sharing arrangement between the state and beneficiaries. In Bangladesh, the beneficiaries would have to compensate all management costs to the project agency, which has many implications given the prevalence of corruption at the grassroots level in public services in Bangladesh (Knox, 2009). In Sri Lanka, the land lease agreement explicitly outlines the sharing arrangement. The financial reasoning is more dominant in Sri Lanka because the new forest policies promote industrial forest plantations with a goal of developing the forestry sector.

The land use change from shifting cultivation to commercial plantation for financial gains is an unnatural transition under the pretext of achieving social equity. Implementing agencies essentially ignore the access of shifting cultivators to the agricultural subsistence products they no longer farm. The rubber plantations in the case study sites in Bangladesh created employment for the beneficiaries at the beginning of the Upland Settlement Project; however, these opportunities subsequently diminished. Most beneficiaries are unable to secure a livelihood, although the program promises better employment in the near future when latex collection begins. Only a handful of beneficiaries have benefited from alternative livelihood opportunities, mostly through other development programs. Limiting home gardens to one-half hectare per beneficiary cannot radically improve the chances of a secure livelihood in this underdeveloped hinterland region. If beneficiaries were given a choice to grow traditional agroforestry-based home gardens on another relatively large piece of land allocated for planting rubber, the likelihood of securing a livelihood under this program would improve.

Studies from Bangladesh (Alam, 2011; Ali, 2005; Kabir & Webb, 2009; Motiur et al., 2006) and Sri Lanka (Perera & Rajapakse, 1991) highlighting the significance and contribution of home gardens in the context of rural livelihoods support this argument, as does additional supporting literature (e.g., Jagger & Luckert, 2008; Kumar & Nair, 2006; Méndez & Somarriba, 2001; Mitchell & Hanstad, 2004; Trinh et al., 2003). Home gardens in the tropics are the oldest forms of managed land-use systems and are considered the epitome of sustainability (Kumar & Nair, 2004). Home gardens are receiving wider recognition for agricultural sustainability and for their role in carbon sequestration (Albrecht & Kandji, 2003).

Furthermore, the condition of rubber plantations in case study sites in Bangladesh varied, unlike home gardens. This condition is mainly attributed to the management arrangement; rubber plantations were driven by the implementing agency that failed to organize the beneficiaries to care for them. Free riding is inevitable in the state-driven plantation model based on collective management. Some beneficiaries have even resorted to shifting cultivation in areas earmarked for rubber plantation. This casts doubt on the goal of achieving ecological stability under a private forest tenure arrangement. This scenario is no different in the farmers' woodlots program in Sri Lanka.

Despite the Forest Department's extensive promotion of teak plantations in the farmers' woodlots program in Sri Lanka, the beneficiaries preferred their traditional tree-based agricultural systems to guarantee intercropping in the initial years. In fact, the beneficiaries revealed their preference for establishing home gardens and/or resuming agriculture on allocated forestland if provided with irrigation facilities. However, any deviation in the land use, other than the state's directive to grow teak on allocated forestland, would result in the cancellation of the land title. Such preferences among previous shifting cultivators imply that commercialized land use transition has been imposed on them.

A combination of factors contributing to the transformation of shifting cultivation, as identified in the case study sites in Bangladesh and Sri Lanka, have also been established in other parts of Asia (e.g., Fox et., 2009; Imang, Inoue, & Sardjono, 2008; Kawai & Inoue, 2010). Fox et al. (2009) have identified six trends, "classifying shifting cultivators as ethnic minorities with nation-states, dividing the landscape into forest and permanent agriculture, expansion of forest departments and rise of conservation, resettlement, privatization and commoditization of land and land-based production, expansion of infrastructure and the promotion of industrial agriculture" (p. 305), which have contributed to the demise or transformation of shifting cultivation in the context of Southeast Asian countries.

The forest tenure reforms that include the distribution of forest and other state land to shifting cultivators/ethnic people in the Chittagong Hill Tracts in Bangladesh are essentially resettlement efforts to bring socio-political stability by granting land tenure to the ethnic people. More importantly, these efforts are intended to bring shifting cultivation areas under the management of the state and to restore tree cover through commercial plantations. The former is evident from the fact that the state maintains a strong grip on commercial plantations because it has a stake in the benefits. The latter is apparent from the fact that there is no prospective land use plan established by the state in the case study sites. Through strict enforcement, the state ensures that the forestland allocated in the program remains under commercial tree cover and does not revert to agricultural activities. The cause and consequence of the expansion of Forest Departments and the rise of conservation initiatives in Bangladesh, Sri Lanka and other developing countries in the post-forest policy reform era explains this state intervention. The state's serious attempts to halt the rampant encroachment of forestland in Bangladesh and Sri Lanka further substantiate it. In Bangladesh, more than one-third of 64 districts have no natural forests left (Millat-e-Mustafa, 2003). In Sri Lanka, forestland has also declined over the years because of shifting cultivation and house construction (Sarkar & McKillop, 1991). Granting private forest tenure is a strategy to recover encroached land and to halt further forestland encroachment in Bangladesh (Muhammed et al., 2008). This strategy is evident from the fact that in addition to the plantation program in the uplands of Bangladesh, similar programs have expanded in the lowlands (Kabir & Webb, 2005; Muhammed et al., 2008). The same situation applies to Sri Lanka; however, given the paucity of suitable state-owned forest and non-forestland, the farmer's woodlots program could not be expanded. Nevertheless, the state continues to maintain a hold on existing woodlots.

CONCLUSION

This study shows the weaknesses in the private forest tenure arrangement in shifting cultivation areas in Bangladesh and Sri Lanka and its inability to realize social equity on two fronts. First, the better-off locals are primarily the recipients of the allocated lands, in contradiction to social equity. Second, the policy intention of providing a secure livelihood to beneficiaries remains unachieved because the state-driven land use change, from shifting cultivation to commercial plantation, discounts traditional subsistence agricultural production. The beneficiaries unquestionably prefer

traditional tree-based agricultural systems or agroforestry systems, land-use systems considered the epitome of sustainability in the tropics (Kumar & Nair, 2004), or resuming traditional farming on the distributed lands. Private forest tenure has not helped in securing local livelihoods. Instead, it is the state-enforced commoditization of subsistence agricultural production as commercial plantations are managed under its strict control over the entire rotation. The state clearly has a stake in commercial plantations. This study suggests that this private forest tenure arrangement is one way of bringing shifting cultivation areas under the fold of the state management and tree cover. This new model of forest governance evokes the industrial forestry era of the 1950s and 1960s in developing countries. The policy makers must seriously reconsider this approach to forest governance.

To conclude, the rationale of the private forest tenure arrangement within the scope of socially oriented participatory forestry policies and programs extends beyond good governance and forest conservation to the commoditization of traditional subsistence agricultural production that integrates forest use in shifting cultivation areas. To be specific, the commoditization of subsistence agricultural production may not actually work. It is imperative that this subject be researched further to fully ascertain the impact of the changing social, economic and environmental circumstances produced by this type of land use transition in the shifting cultivation areas. There is a need to address these concerns, particularly, if the farmers who gave up shifting cultivation are to benefit from REDD+. Further research would also complement efforts to moderate the inclusion or exclusion of this land use change within the scope of REDD+.

ACKNOWLEDGEMENTS

The authors are grateful to the Japan Society for the Promotion of Science (JSPS) for providing a research grant to undertake this study. The corresponding author revised this study while working as a visiting Senior Research Fellow at the Asia Research Institute, National University of Singapore.

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