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INTRODUCTION

Forest conservation and rehabilitation policies in Vietnam: their assessments and local responses

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During the past two decades, Vietnam has achieved remarkable economic growth. One of the factors sustaining this trend is its strong export growth, with wood products ranked among its top-five export commodities (Phan et al. 2011). The total value of Vietnam's exported forest products has been fourth among the Southeast Asian countries since 2011, of which sawnwood and wood-based panel exports have increased significantly (FAOSTAT–Forestry 2015).

An even more remarkable achievement in the global forestry sector is the rapid increase in forest cover, which has attracted researchers in the field of forest-transition theory. Among Southeast Asian countries, Cambodia, Indonesia, and Myanmar have experienced rapid forest-cover loss, and deforestation is still slowly progressing in Malaysia. Forests in Thailand and the Philippines, which experienced rapid deforestation earlier than other countries, reached a critical level but have started to recover recently, appearing to follow the so-called environmental Kuznets curve. The change in Vietnam, however, is much more significant than forest gain in other countries of Southeast Asia, exceeding even the rate in China. Forest cover in Vietnam increased from 9.36 million ha in the 1990 Global Forest Resources Assessment (FRA) to 14.8 million ha (47.6 % of the land area) in the 2015 FRA (FAO 2015).

This overall gain corresponds closely to the shift in land policies, namely, a series of decollectivization policies that have been implemented since the end of the 1980s and were introduced first to farmland and then expanded to forestland. Forestland formerly managed by state enterprises has been allocated to various management entities, among which individual households play a key role in the restoration of degraded forests. It was expected that forestland allocation (FLA) would make forest conservation and livelihood improvement compatible (Castella 2006), and a series of afforestation programs have supported tree-planting activities by households that received allocations. Since natural forests remain in mountainous areas along the border between Vietnam and Laos that is populated by ethnic minorities, the FLA policy has naturally involved these minorities, and therefore, many of the previous studies focused on the impacts of FLA on conventional forest resources and forestland use following the policy's implementation.

Forest gain in Vietnam, as in every other country, is a result of offset in land-use change. While tree planting by households has contributed to an increase in the forest cover, the primary forest area has continued to shrink. Natural mangrove forests are one of the forest types facing land-use changes to non-forest purposes, especially for shrimp farming after the 1990s (Thu and Populus 2007). Hence, it is expected that REDD + (Reducing Emissions from Deforestation and Forest Degradation, including the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks in developing countries) will also function effectively in Vietnam as a countermeasure to reduce primary forest loss and to encourage tree planting as well.

For REDD + implementation, it is necessary to develop the methodology of monitoring forest carbon stocks based on satellite remote-sensing technology, called MRV (Monitoring, Reporting, and Verification) and to clarify the opportunity costs of GHG emission mitigation options in different land uses and forest types. However, a new method for remote sensing still needs to be developed for precise estimation of the carbon-stock increase; this is because of several drawbacks in remote-sensing technology and the accuracy of carbon-stock estimation in forests. The key factor in the estimation of carbon stocks in forests is to estimate tree volume using many kinds of remote-sensing data. Recently, numerous researchers have attempted to estimate above-ground biomass using remote-sensing imagery in other regions of the world.

In this special issue, the results of one of these trials are reported, focusing on the relationship between the aboveground biomass (tree volume) measured through a field survey in Thua Thien Hue Province and the integrated EVI (Enhanced Vegetation Index) in one year (Pham et al. 2016). Another report (Pham and Yoshino 2016) examines how mangrove management systems affect changes in mangrove forests. To detect these changes, remote sensing was used. Nguyen et al. (2016) focused on the applicability of REDD + to Ba Be National Park in Bac Kan Province and estimated the opportunity cost of different land-use types. Nguyen TT et al. (2016) reported the impact of FLA on local livelihoods based on a case in Thua Thien Hue Province.

Natural resources and biodiversity in forests, mountains, freshwaters, and the ocean are undergoing deterioration in many parts of the world. Designating certain areas with rich but degrading resources as protected areas is among the common conservation policy approaches. According to an IUCN report and the World Database on Protected Areas, 15.4 % of the global landmass is designated as protected area, whereas 3.4 % of the global ocean area was registered as protected as of 2014 (Worboys et al. 2014). Under protected area programs, local inhabitants are often economically and culturally vulnerable to access restrictions related to natural resources such as trees, agricultural products, and fish stocks that are protected and monitored for conservation. Protected area programs, therefore, should not only focus on the physical protection of natural resources but also consider support for alternative livelihoods for local residents.

In regard to the above-mentioned key components of the policy, protected areas are still facing major difficulties. Many protected areas lack the technical, institutional, and financial capacity to enforce conservation regulations and activities, monitor environmental changes in protected areas, and modify and continue conservation activities that lead to long-term protected area management. These challenges, especially insufficient financial resources, are critical in developing countries, and Vietnam is no exception. In a partial response to this problem, in this special issue Kaida and Dang (2016) attempt to estimate the economic value of a marine protected area in Nha Trang Bay, Vietnam, and discuss possible support programs for local livelihoods and the introduction of entrance fees to the protected area as a potential financial source for sustainable protected area management.

Note: The authors of this special issue are Vietnamese and Japanese; they share the custom of spelling their names in surname-first order, but in this issue we have applied given-name-first order.

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