

論文の内容の要旨

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State Forest Land in Indonesia: Case Study in Central Java

(インドネシア国有林ソーシャル・フォレストリー事業における参加型経営と
森林管理に関する研究—中部ジャワの事例—)

The rules set by the state to protect state forests have strictly limited local communities' access to state forestland for farm use and to forest resources. At the same time, a growing population has put higher pressure on state forest resources (Simon, 2003, p. 227; Sunderlin, 1997), particularly with respect to the resources derived from trees. As a result, local communities often violate state rules to access state forestland and forest resources, which has contributed to forest depletion.

Social forestry is an institution in which communities or community members are organized to manage forest resources. In doing so, incentives for the community or community members to participate in the social forestry are required. *Tumpang sari* (TS), a temporal type of agroforestry, is a conventional way to provide such incentive. In TS, a parcel of state forestland is allocated to a farm household where members of that household plant teak trees and maintain the young trees for two years. TS attracts small or landless farmers who are dependent on forest resources. In exchange for labor contributed toward planting and maintaining the trees, TS farmers receive a small cash payment and can keep all yields from intercropping of food crops. After two years, the farmers have to leave their TS parcel and can cultivate in a new parcel. TS did not provide tree tenure or land tenure security. As a result, reforestation often failed because farmers damaged the young trees they had planted in order to prolong the cultivation period. They also had no incentive to apply sustainable forest resource appropriation, which thereby depleted the existing forests.

Following an economic crisis in Indonesia in 1998, forest depletion turned into severe deforestation due to massive illegal logging. An inability to enforce the laws, together with collective pressure from local communities during this crisis, marked the

decline in the state's dominance and power with respect to forest governance. This situation highlighted the increasing pressure on the state to take the voices of other stakeholders into account. Pressure from the other stakeholders, including local communities, university scholars, and local Non-government Organizations, led to the formation of a new social forestry program in 2001.

State forestlands in Java are managed by the State Forest Company (SFC) and the Forest Department (FD). The new social forestry program implemented in the SFC territories is known as the PHBM, while the one implemented in the FD territory is known as the HKM. While TS is still an integral part in the new social forestry programs, timber sharing is introduced as the new arrangement. The state, which used to be the sole property rights holder for timber, partially transfers its rights to the local communities.

While the community approach is used in the PHBM, the individual approach is used in the HKM. The community approach to social forestry is where community members and the state jointly manage the forests and share the benefits from increases in forest resource stock and flow. In this approach, property rights are partially transferred from the state to a community. The individual approach to social forestry is where individuals or groups of individuals join with the state to manage the forests and share the benefits from the increases in forest resource stock and flow. In this approach, property rights are partially transferred to individuals.

Within the SFC territory, KPH Cepu was chosen as the case study because of its progress in implementing the PHBM, particularly in timber sharing with the communities. Thus, PHBM implementation in KPH Cepu would provide a clear example of benefit sharing between the state and the communities and how it affected their participation in forest management.

Although the HKM is a specific case that is only available in Gunung Kidul District and not in other places in Java, comparing this case to the PHBM will provide a clear distinction of outcome between community and individual approach within the same context of state forests facing high population pressure within relative proximity and participating communities with similar economic, social, and cultural settings.

The first objective of this dissertation is to evaluate the partnership and benefit sharing between the state and local communities. The second objective is to investigate the effect of the programs implementation on forest governance within the participating communities.

Transfer of property rights is used as framework in evaluating the partnership and benefit sharing between the state and the communities/community members.

Transfer of property rights is the legal framework that defines communities/community members' rights over forest resource stock and flow of various benefits such as non-timber forest products, thus determining the incentive structure they face for reforestation, tree maintenance and protection, and sustainable appropriation of the resources produced as a result of reforestation. Schlager and Ostrom's (1992) description of property as a bundle of rights is used to capture the degree of property rights transfer from the state to communities/community members.

In Gunung Kidul District, TS farmers' access to forestland and forest resources has been improved as a result of the HKM implementation. Transfer of property rights from the state to the HKM groups has been a coherent approach to the establishment of an effective incentive structure. According to an estimation applying internal rate of return and benefit-cost ratio analysis, current timber sharing arrangements in the HKM are financially profitable for farmers.

The existence of the HKM groups is crucial because it holds an important role as an institution that binds members together to form collective-choice rules by setting up group meetings where members can channel their opinions, and operational rules such as forest patrol and punishment for rules violations. The co-management between the state and community in the HKM is a co-management as state-nested system and is a win-win solution for both the state and the community in the satisfaction of their needs and interests, thus providing incentives for both parties to participate in forest resource management.

HKM groups independently form institutional arrangements and operational rules in response to incentive structures they face in the HKM. Governance in the group is based on *musyawarah mufakat*, with voting as the alternative to reach a decision. However, it produces different sets of operational rules across groups. Operational rules are greatly shaped by the farmers' experience prior to HKM implementation, their economic attributes, and local customs and culture.

PHBM implementation improves community access to state forestland and forest resources mostly because of complete access and withdrawal rights transfer. The co-management between the state and community in the PHBM is co-management as a state-nested system. However, the partnership between the communities and the SFC in the PHBM is not an equal one because it does not allow community members to participate in forest resource management on their own terms.

In the implementation of PHBM, collective actions such as forest patrol that are limited only by LMDH trustee board members are the result of disproportionate distribution of timber sharing revenue among different stakeholders that stems from

disjointed collective-choice arena of each group in which collective-choice rules and operational rules are formed. TS farmers and other community members are excluded from the collective-choice arena of the rich (i.e. LMDH) in which decisions for benefit distribution is made. Larger amount of available benefit does not guarantee better rules compliance and collective action in the community at large because the other stakeholders lack the incentive to do so. As a result, the LMDH trustee boards find it necessary to protect the forest on their own, and this requires large portions of the timber sharing revenue to cover the high costs incurred.

The PHBM has been a success – although limited – in terms of community participation in forest management that the previous programs failed to accomplish. The problem that exists and needs to be solved in the PHBM is a more efficient timber sharing distribution that ensures a more cost-effective and larger scale collective action for forest management and protection.

This dissertation demonstrates that different approaches to social forestry program affect the extent of benefits (i.e., incentives) community members receive from the program and their involvement in forest management. This, in turn, ultimately affects the outcome of each program in regards to forest resource provisions, appropriation patterns, and forest protection.

Forest resources in state forests in Java are an accumulation of long-term investments and TS farmers largely contribute to these long-term investments. In both the PHBM and the HKM, timber sharing is given as compensation for the investments. In the PHBM, however, timber sharing is given based on short-term investments made by the LMDH trustee board members (i.e., forest patrol). Therefore, TS farmers as community members who have been contributing the most to the forest management still face the same incentive structure as the conventional TS, despite the available timber sharing revenue. This implies that TS farmers in the PHBM cannot internalize positive outcome from their investment in forest resource provision, maintenance, and protection, while TS farmers in HKM are able to do so. Therefore, the extent of their contribution to forest resource management and protection is much higher in the HKM than in the PHBM.

Although the individual approach appears to be more effective in providing incentives for forest resource provision, management, and protection than the community approach, this approach is not the perfect approach for every social forestry program applied in different settings. For forests where mature standing trees are still largely available, a community approach is more feasible than the individual approach. However, problems that have been identified in the community approach, such as fair

benefit distribution based on individual contributions, must be addressed and solved. This shows that the community approach to social forestry programs requires an incentive provision for individuals to overcome its difficulties. For other community members (non-TS farmers), their awareness of timber sharing revenue used for their benefit is crucial to encourage a sense of belonging and responsibility toward forest resource sustainability. This will ultimately reduce the transaction cost for forest protection and lead to total collective action by the community.

The individual approach is the most appropriate approach for totally deforested forests because it provides benefits as a result of the individual farmer's long-term investment. Monitoring by the HKM groups is crucial to cope with the possible forest security problem by members themselves. This shows that the individual approach to a social forestry program requires collective action to overcome its difficulties.

In both the individual and the collective approaches to social forestry, collective forest management and protection are crucial to ensure better forest condition. These are fundamental elements in management of forest resources as common property. In regard of benefit distribution, however, it is essential that individual contribution in producing the benefit is taken into account. This takes form in tree tenure security where the planters have access to the timber from trees they plant. This is a fundamental element in management of forest resources as private property. Therefore, it can be concluded that private property institution nested in the common property institution is a key in a successful implementation of a social forestry program on state forestland.

From two case studies presented in this dissertation, it is important to note that social capital is a factor that supports community participation in forest resource management. Social capital that exists in Javanese rural communities facilitates the existence and effectiveness of collective actions in forest security and benefit sharing among community members. This is particularly prominent in the HKM case where customary activities and norms are embedded in the HKM group's activities and individuals (i.e., HKM members and non-members) behaviors, and thus promote effectiveness with relatively low monitoring and transaction costs. With the current arrangements available in the PHBM, however, the effect of social capital in supporting community participation in forest management is not yet clear. That is because there is still remaining benefit distribution problem among different stakeholders within the community. After benefit distribution problem is solved in the PHBM, further research is needed to investigate the effect of social capital in supporting community participation in forest management.