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**Institutional Structure and Performance of Community Forest Management  
*Case of Vietnam***

Tuan Do Anh and Jürgen Pretzsch

Dresden University of Technology, Institute of International Forestry and Forest Products, Piener Str.7 01737  
Tharandt, Germany. Email: dotuan71@yahoo.com.

**Introduction**

In the last decades, community forest management (CFM) has been considered as a promising forest management system in many developing countries. In this context, local rule (institution) systems have gained increasingly attention of many policy makers and scholars. Various institutional structures for communal forest management have been identified and developed. Some have been institutionalized, e.g. Joint Forest Management (JFM) in India and Forest Users Group (FUG) in Nepal.

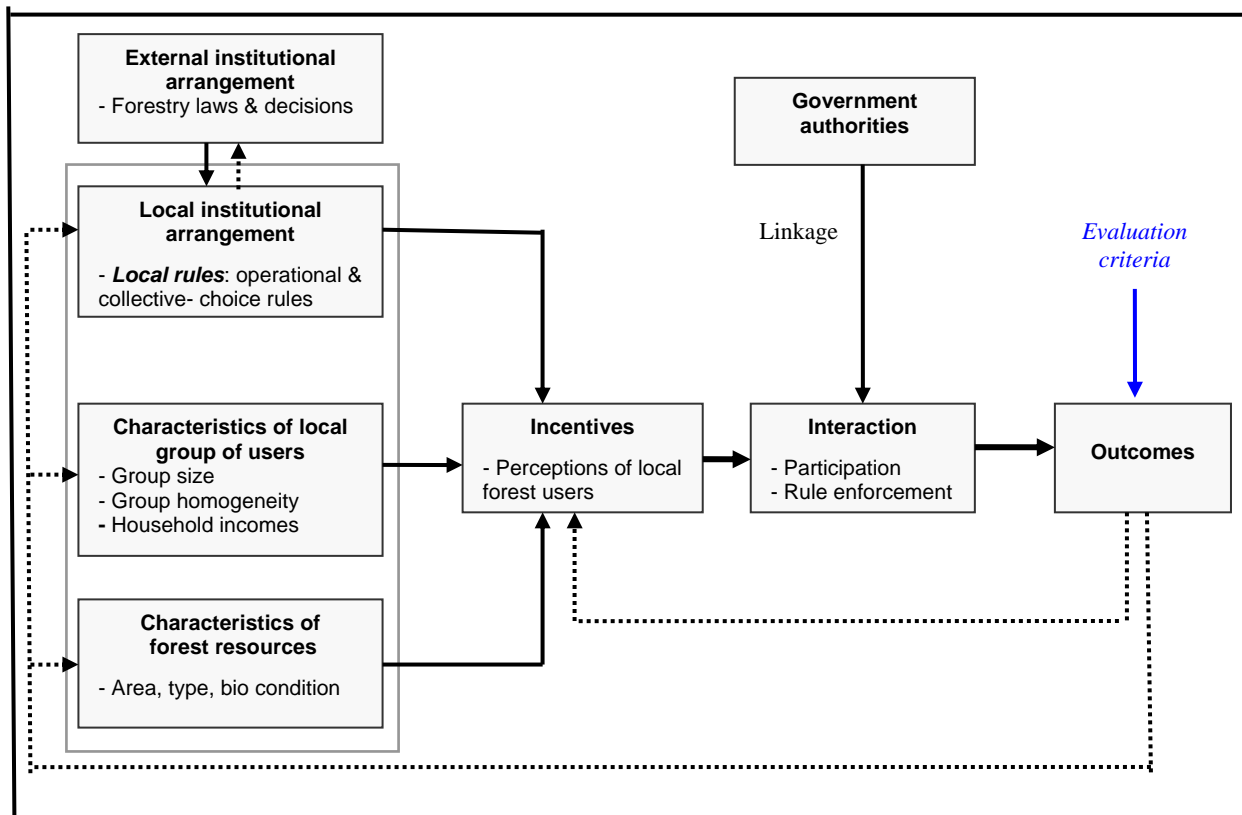
In Vietnam, there are approximately 2.3 million ha of forestlands under the management of local communities as communal property resource, and most of the lands are being governed under two different institutional structures. The first is Village Forest Management (VFM), in which all households of a village belong to a forest management group. The second is Forest Users Group (FUG), formed by a small number of households - a subset of a community. More recently, CFM in Vietnam has received considerable attention from both local authorities and the central government. However, there is still lack of studies on the relationship between the institutional structure and the performance in the community forest management. This study, therefore, tries to fill this gap by conducting comparative institutional analysis of eleven CFM models in the two institutional structures to answer the following research questions:

1. What are the characteristics on institutional arrangements of the CFM models in the different institutional structures?
2. How have the CFM models in the different structures performed?
3. What is the influence of institutional factors on the performance of the models?

**Research methodology**

The research conceptual framework of this study (Fig.1) was based on the institutional approach to natural resource management and was adapted from the frameworks for common-pool resources (CPRs) analysis of Oakerson (1992) and Thompson (1992). In-depth comparative case study was chosen as research approach. In this study, both qualitative and quantitative methods were employed and combined to collect and to analyze data at group and individual levels. Three different data collection methods Participatory Rural Appraisal (PRA) and Rapid Rural Appraisal (RRA), household and individual interview and forest inventory were employed. PRA and RRA tools were used to collect data at group level. Household and individual interview was applied to

get in-depth information on household socio-economic condition and the perception of local forest users. Forest inventory was used to investigate biophysical condition of the forest resources. Multi-Criteria Analysis (MCA) was employed to evaluate the performance of the CFM models in four aspects: i) *resource entirety*, ii) *economic efficiency*, iii) *equitability*, and iv) *sustainability*.



**Figure 1: The Conceptual framework of the study**

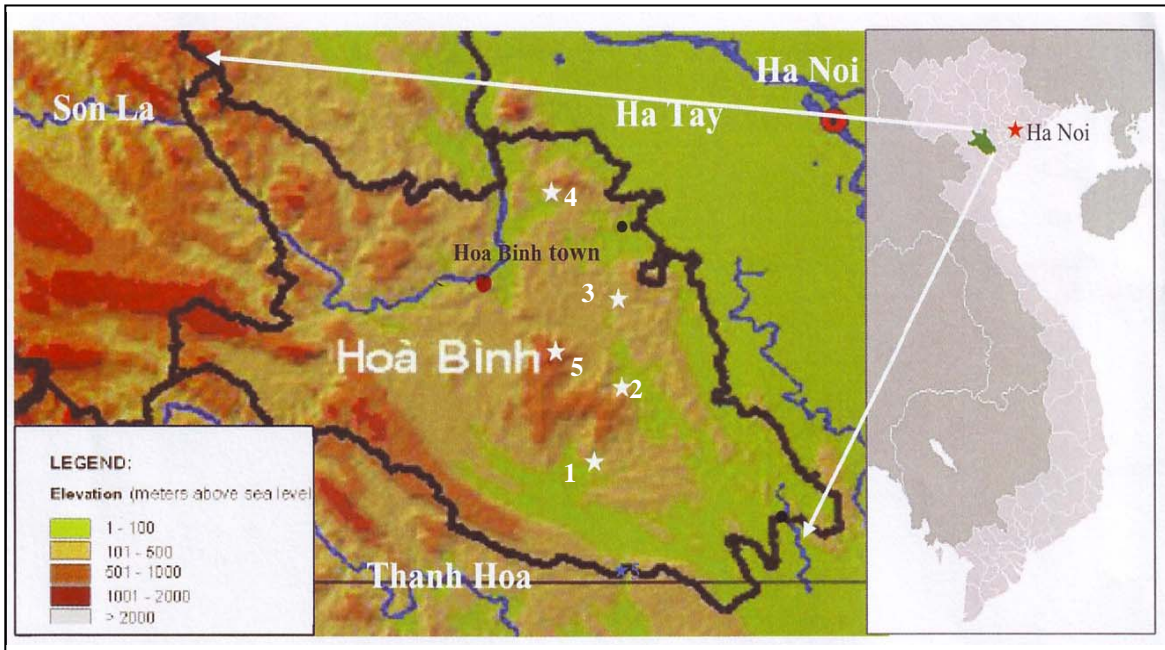
Source: Adapted from Oakerson (1992) and Thompson (1992)

## Study area

This study was conducted at Hoa Binh, a mountainous province in the North of Vietnam in three years (from 2003 to 2005). Five villages of ethnic minority groups in the different ecological zones of the province were selected as study sites: Cai village (★1) at the low land zone, Dinh village (★2), Suoi Than village (★3) and Vanh village (★4) at the medium altitudinal zone; and Dup village (★5) at the high land zone (Fig.2). All the study villages were natural-based villages, and the livelihood of the local people was rather subsistent orientation. In general, local people were the poor and they relied heavily on agriculture and forestry cultivations. On average, over 50 percent of the local households were ranked as poor households.

In the study villages, all the natural forest areas were self-claimed as the communal properties by the local communities after the collapse of the system of agriculture collectives (the state owned organizations at rural areas) in 1980s. Since then, the local communities have collectively managed the communal forests for their common benefits. In Vanh and Suoi Than villages, so far all the natural forests have been managed by the VFM models. In the three other villages (Dup, Dinh and Cai), the management of the communal forests has gone through two different periods with the different institutional structures. The forests were firstly governed by VFM models and then by the FUG models. In these villages, there was a transformation on institutional structure for communal forest management from VFM into FUG. After a period of the communal forest management by

the VFM models, the local Village Management Committees (VMCs) unofficially allocated the communal forests to the FUGs through the communal forest management contracts between the VMCs and the FUGs. The FUGs have to pay fees to the VMCs. At present, all the communal forest areas at Cai and Dinh villages are being managed by the seven FUGs (three at Cai villages and four at Dinh village). In Dup village, both the VMC model and the FUG models are existing simultaneously. Most of the communal forests are being managed by the four different FUGs, but some the grazing land and poor forests are still being governed by the community as a whole.



**Figure 2: Elevation map of Hoa Binh province and locations of the study villages**

Source: Fieldwork

## Results

In this study, eleven CFM models (three VFM models at Vanh, Suoi Than and Dup villages and eight FUG models at Dup, Dinh and Cai villages) were selected as case studies. The following paragraphs briefly present the institutional characteristics and analyze the performance of the CFM models and its determinants.

### *Characteristics of the CFM models*

In the VFM models, local communities are both *de facto* owners and users of the forests, and the group sizes of the models are as big as the populations of the villages (from 56 to 141 households) (Table 1). Membership of all the VFM models is determined by a fixed principle. That is, every household belongs to a village is legitimate member of a VFM model. All activities related to the communal forest management are guided by the VMCs, and duties of forest patrolling and rule enforcement are entrusted to village security teams or hired forest guard(s). Villagers do not have to involve directly in forest protection activities, but they have to contribute fee (normally several kg of rice per household per year) to their VMCs. The process of local rules making and enforcement is taken at village level with the dominating role of the VMCs. In general, the CFM models have almost operated independently without or with little cooperation with government authorities, and the local communities have focused on protecting and harvesting the available resources.

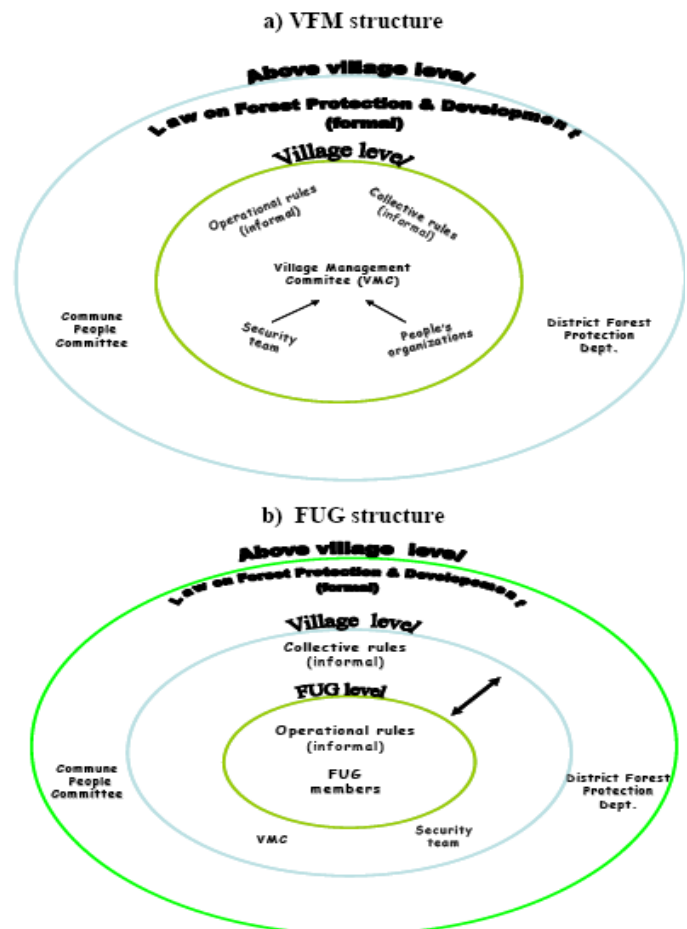
**Table 1: Some characteristics of the CBFM Models**

CBFM model	Characteristics of forest users				Characteristics of forest resources			Characteristics of rule and rule enforcement				
	Years of model	Group size (hh)	E index	W index	Forest area (ha)	Forest type	Forest condition	Operational rules	Collective Choice rules	Linkage with gov. authorities	Average labor/hh/ha	Rule enforcement level
Vanh_CFM	20	56	0.90	0.31	29.0	Mixed	Very poor	Yes	Yes	Weak	0.16	Very weak
SuoiThan_CFM	27	87	1.00	0.30	21.0	Mixed	Medium	Yes	Yes	Moderate	0.23	Moderate
Dup_CFM	18	141	0.82	0.27	31.0	Woody	Very Poor	Yes	Yes	Weak	0.05	Very weak
Dup_FUG	6	8	1.00	0.41	6.3	Mixed	Poor	Yes	Yes	Moderate	8.20	Moderate
Dinh_FUG#1	10	14	1.00	0.28	4.0	Bamboo	Medium	Yes	Yes	Strong	14.13	Very strong
Dinh_FUG#2	10	12	1.00	0.32	4.0	Bamboo	Medium	Yes	Yes	Strong	16.46	Strong
Dinh_FUG#3	10	8	1.00	0.34	4.2	Bamboo	Medium	Yes	Yes	Moderate	21.83	Strong
Dinh_FUG#4	10	13	1.00	0.34	3.8	Bamboo	Medium	Yes	Yes	Strong	14.59	Very strong
Cai_FUG#1	13	6	0.78	0.28	6.0	Mixed	Medium	Yes	Yes	Moderate	9.26	Very strong
Cai_FUG#2	13	7	1.00	0.59	8.0	Mixed	Medium	Yes	Yes	Strong	8.21	Very strong
Cai_FUG#3	13	6	1.00	0.56	6.0	Mixed	Rich	Yes	Yes	Strong	12.47	Very strong

Notes: E index (Ethnic homogeneity index) and W index (Wealth homogeneity index)  
 $0 < E \text{ index} \leq 1$ ;  $0.25 \leq W \text{ index} \leq 1$

Source: Fieldwork

In the FUG models, the group sizes of the FUGs were smaller (from 6 to 14 households). Choosing members of a FUG is more flexible and usually based on agreement of all FUG members. In this structure, the communal forests are still the common property of a village, but FUGs are the users of the resources. The FUGs are nested under the local VMCs (Fig.3). However, they are still relatively independent from the VMCs. The FUGs have rights to develop their own operational rules and organize all management activities related to the contracted forests. Different from the VFM models, all communal forest management activities of the FUG models were directly carried out by the FUG member households in rotational way, household by household. The local forest users of the FUG models not only focused on harvesting available resources but also spent their resources doing forest maintenance and enrichment. In the FUG models, there was close linkage between the FUGs and the government authorities (especially VMCs) in rule enforcement and conflict resolution.

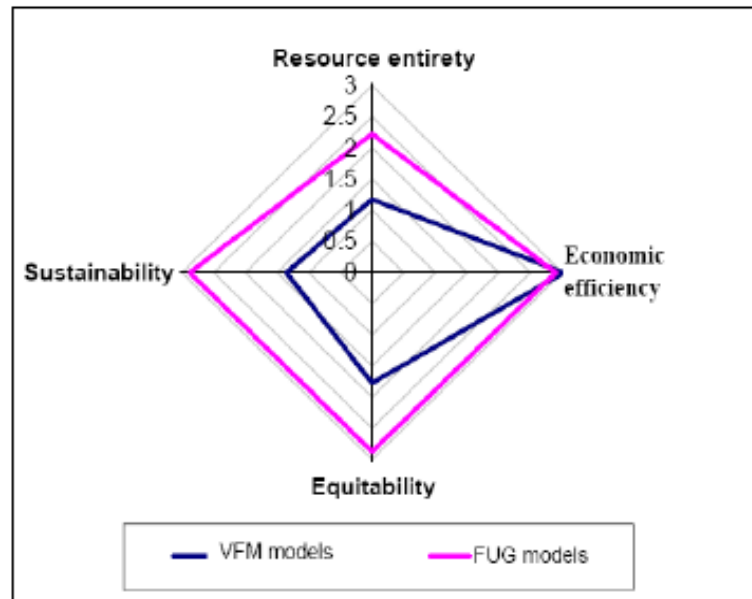


**Figure 3: Arrangements of different levels of rules & stakeholder in VFM structure and FUG structure**

Source: Fieldwork

### Performance of the CFM models and its determinants

Four criteria *resource entirety*, *group economic efficiency*, *equitability* and *sustainability* were used to evaluate the performance of the models. The value of each criterion is presented by an index, which is determined by score(s) of one or a number of indicators. The indexes are continuous variables, which may take any value from 1 (weak) to 3 (strong). The study result shows that the performance of the FUG models was significantly better than the performance of the VFM in three aspects: *resource entirety*, *equitability* and *sustainability*. However, there was no significant difference in terms of *economic efficiency* (Fig. 4).



1= weak performance; 2= moderate performance; 3 = strong performance

**Figure 4: Average performance indexes of VFM models & FUG models**

Source: Fieldwork

Under the management of the FUG models, the communal forest resources were managed well. The forest areas were almost unchanged, and the forest quality was maintained and even improved. Almost all the FUG members were satisfied with the benefit sharing in the forest management. They also highly appreciated the appropriateness of their management structure (FUG structure) and were willing to participate in the forest management. In the VFM models, the communal forest resources, however, significantly declined in both area and quality. Conflict in the communal forest management was rather serious, especially over communal forestland. Illegal communal land encroachment by both local villagers and neighboring villagers happened frequently and persisted for long time. Local forest users of the VFM models, in general, did not agree with the benefit sharing among members in their groups, and many of them were not satisfied with the VFM structure.

With regard to the determinants of the performance of the CFM models, the statistical tests show that group size has significantly negative relationship with level of rule enforcement and performance indexes of the CFM models (Table 2). The small-sized models performed better than the large-sized models. However, the influence of the group homogeneity indexes (E index and W index) on the performance of the models is not clear. The linkage between local group and local authorities in the resource management is an important factor. It had a positive effect on the success of the CBFM models. The involvement of the local authorities backed the local group in sanction efforts and conflict resolution. It also prevented the local group of forest users from abusing their rights in use of the forests.

**Table 2: Determinants of rule enforcement and performance of the CFM model**

Factors	Dependent variables					
	Rule enforcement level	Resource entirety index	Economic efficiency index	Equitability index	Sustainability index	Overall performance index
Group size (number. of households)	<b>-.621**</b>	<b>-.661**</b>	.202	-.472	<b>-.580*</b>	<b>-.565*</b>
Group ethnic homogeneity index (E index)	.321	<b>.617**</b>	-.191	<b>-.579*</b>	<b>.588*</b>	0.519
Group wealth homogeneity index (W index)	.331	<b>.563*</b>	-.301	-.151	-.365	-.322
Distant from village center to communal forest (km)	-.513	-.387	-.301	-.115	-.365	-.322
Number of management activities taken by group	<b>.617**</b>	<b>.746***</b>	.000	<b>.592*</b>	<b>.656**</b>	<b>.668*</b>
Average man-days per household per ha	<b>.610**</b>	<b>.673**</b>	-.500	<b>.791***</b>	<b>.747***</b>	<b>.661**</b>
Linkage between local group & government authorities	<b>.816***</b>	<b>.960***</b>	.162	<b>.903***</b>	<b>.977***</b>	<b>.935***</b>

\*, \*\* and \*\*\* denote that correlation is significant at the 0.1 level, the 0.05 level and the 0.01 level respectively

Source: Fieldwork

## Conclusions and recommendations

The FUG is one of the two key institutional structures for managing communal forests in Vietnam. It presents a nested structure of FUGs (as communal forest users) under local communities (as communal forest owners). The FUG system is the adaptive system, reflecting the institutional evolution in communal forest management in Vietnam. In the context of this study, the FUG models performed more successfully than the VFM models, which operated almost independently. Group size and linkage between local groups and government authorities are two key determinants affecting the performance of the CFM models.

It is suggested that FUGs should be recognized as legal entities in the policy frameworks for forestland management in Vietnam. In community forest management projects, the FUG structure should be also considered as an alternative solution. In case, there are some small scattering patches of communal forests within boundary of a village, these forest patches should be allocated to small groups of forest users through forest management contracts between the groups and their local authorities. In addition, a clear cooperation mechanism between local groups of forest users and government authorities in communal forest management should be institutionalized.

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