

Research proposal:

**Factors Influencing Local Organization of Forest Management
A Case Study of Forest Devolution in Dak Lak, Vietnam**

(The fifth draft)

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TABLE OF CONTENTS

1. RESEARCH OBJECTIVES	3
1.1. OBJECTIVES	3
1.2. JUSTIFICATION OF THE RESEARCH OBJECTIVES	4
1.2.1. Relevance of research to practical matters	4
1.2.2. Relevance to the theoretical matters	8
2. CONCEPTUAL FRAMEWORK	16
3. PROPOSITIONS	19
3.1. MAIN PROPOSITION	19
3.2. SUB-PROPOSITIONS	19
4. MEASURES AND SELECTION OF OBSERVATIONS	19
4.1. MEASURES	19
4.2. OBSERVATION STRATEGY	21
5. TECHNIQUES FOR DATA COLLECTION	23
6. TECHNIQUES FOR DATA ANALYSIS	26
REFERENCES	26
Table 1: Bundle of rights associated with positions	14
Table 2: Summary of main variables and related data collection techniques	25

List of Figures

Figure 1: Summary of variables affecting institutional choice (Ostrom, 1990)	10
Figure 2: Conceptual Framework	16
Figure 3: Process and techniques of observation	22

Abbreviation

Common Pool Resources	CPRs
Department of Agriculture and Rural Development	DARD
International Food and Agriculture Organization	FAO
Forest land	FL
Forest land allocation	FLA
Local organizations	LOs
Local users	LUs
Sustainable Management of Natural Resources In The Lower Mekong Basin Project	SMRP
World Commission on Forest and Sustainable Development	WCFSD

Background

Over the last several decades, deforestation of the tropic and its adverse impacts has been concerns of many countries in the world. It can be seen as a major environmental problem, causes adverse effects to livelihood of humankind. People are worried about deforestation. They are increasingly willing to change their behaviors over forest resources in a way that support their livelihood as well as sustainable use of forest resources (WCFSD, 1999).

To reduce deforestation, participation of local people in forest management has emerged as a viable option. There has been a virtual explosion of interest in forests managed by local communities. Many countries are testing their policies to devolve responsibilities over forest resources to the local users, which are called devolution of forest management. The transfer of resource rights and management functions from state agencies to local users has been seen as a strategy to better protection and use of forest resources. Yet, the success of these policies depends upon the local capacity for collective action and factors that encourage or inhibit collective action are insufficiently understood (Rasmussen and Meinzen-Dick, 1995).

Like other Governments in The world, The Vietnamese government and its Dak Lak provincial authorities have initiated a program devolving forest management to local people, namely the forest land allocation (FLA) program. In doing so, the Dak Lak authorities have devolved parts of its existing forests in several arrangements to local users. Local people have been conferred forest land (FL) use rights over forests with three forms: individual household, group of households and community. Hereafter, they are mentioned as local users (LUs)¹.

Up to now, after 3 years implementing the test program, as reported by the Dak Lak Department of Agriculture and Rural Development (DARD, 2000), proportion of deforestation seems to be reduced. The local people seem to be happy with FLA policies. However, this should be considered as an exogenous emergence and the forestland allocation's outcomes need to be sufficiently assessed before its large-scale application in the whole province as well as nation wide level. The assessment will provide the insights, which are necessary for a successful FLA program. This case study aims at providing an understanding concerning local organization of forest management under impacts of the devolution program in Dak Lak province, Vietnam. Hopefully, the analytical framework, which is developed by this case study, can be seen as useful tool to analyze conditions for sustainable forest management in other places.

1. Research Objectives

1.1. Objectives

The major objectives of this case study are seeks to 1) examine factors that influence local organization of forest management, and 2) analyze conditions which facilitate a robust local organization² of forest management.

By examining local organization of forest management, I want to understand the nature of the devolution in Dak Lak FLA program, how the local users respond to the impacts of the FLA, focusing on the roles of property rights, rules of governance, principles of decision making for protection and use of forest resources, and relations between actors. By

¹ The term of local users, which are used in the paper, refers to different forms of local entities: household, group of households and community.

² The term of "robust organization of forest management" is basically defined by the theory of Ostrom, 1999. More detail about this will be discussed in the subsequent section.

analyzing the conditions facilitating a robust local organization of forest management, I want to understand what conditions are essential for local users to manage effectively forest resource after devolution of forest management. The designed principles for long-enduring common pool resources institutions of Ostrom will be used as a foundation for consideration of robustness. The studied findings from the Dak Lak's practice will therefore verify or supplement robustness of local organization as recommended by Ostrom.

1.2. Justification of the research objectives

1.2.1. Relevance of research to practical matters

(a) The global concern with devolution and the search for appropriate LO of forest management is the important issues.

Over the last decades, forest resources in the world have been rapidly reduced. Annually, 15 million hectares of forest are lost (WCFSD, 1999). This loss creates special concerns of many countries. As reported by the WCFSD, forces causing forest decline are various, of which lacking of mechanisms to involve local communities in forest management can be seen as a key one. Having understood importance of local people's participation in forest management, many countries have launched their policies of devolving control over forest resources from states to local users. More than 50 countries, according to a recent survey of forestry policies (FAO, 1999), claim to support policies of devolution. In many cases, devolution of forest management has emerged as a solution to cope with deforestation.

Although devolution is highly supported, what forms of devolution are consistent, and under what conditions local organizations can play well their roles in forest management are still being questioned. Devolution programs have not always been successful in achieving all of these objectives. Considerably more attention is needed to the factors that make users willing and able to take on an expanded role. Also, it is necessary to understand how local users use resources wisely, distribute the benefits equitably, and sustainably manage resource for future generations (Meinzen-Dick and Knox, 1999).

Indeed, devolution processes of different countries in Africa, Asia, and Latin America, devolution policies differ considerably in the form and extent to which management functions and resources rights are transferred to local users. Generally, some cases that the governments completely withdraw from control over resources and transfers formal property rights to different forms of local users such as communities, users groups, the so-called community-based natural resources management. Alternatively, the state can also hand its rights over forest management to individual households, which leads to individual privatized management. Other cases, the state still remains its management functions after devolution process, which leads to collaborative management or joint management systems or co-management (Meinzen-Dick and Knox, 1999).

Different forms of devolution taken place under differential social political economic conditions also create various results. Devolving resource management to local users in many places has proven successfully but in some cases the resource base has been deleted (Agrawal and Ostrom, 1999). For devolution works successfully local users must have some forms of management and mechanism of coordination or collective action (Meinzen-Dick and Knox, 1999). Taking the case studies on different devolution forms conducted in Kumaon, India and Terai, Nepal³ as an example we can see two opposite outcomes. In Kumaon, the establishment of the forest council for forest management is originated by the demand of local villagers after a long time of protestation and that the devolution of

³ More detail about these case studies see Meinzen-Dick and Knox, 1999

control over forests gains them real decision-making authority. As a result, the forest council is function. In Terai, the user groups of residents in the buffer zones of the protected areas are established as the outcome of negotiation between the United Nations Development Program and the Department of National Parks and Wildlife Conservation. As a result, the user groups gain rights to enter and to use protected area forests but they have no rights of management, exclusion or enforcement. The results of devolution are unachievable (Agrawal and Ostrom, 1999).

The sustainability of natural resource management organization depends not only on appropriate technology and price, but also upon the institutions and organizations involved in resource management (Rasmussen and Meinzen-Dick, 1995). Indeed, most of devolution programs aim at handing over the role of management to local users formerly assigned to the government. To do this, it clearly requests a plausible mechanism to coordinate the activities of group members, the so-called collective action. A good coordination needs to have suitable rules for using, monitoring, sanctioning and so on. Therefore, a robust organization needs to have certain conditions for its operation (Ostrom, 1999).

In conclusion of this section, searching for appropriate LO for devolution of forest management is, therefore, essential. It attracts concerns of many researchers in the world and the devolution of forest management in Dak Lak is not an exception. This proposed case study is looking at the factors influencing of local organization of forest management and the conditions under which local organizations can play their roles in forest management activities. It therefore can contribute empirical understanding to the global concern in answering the questions of appropriate organization for devolution of forest management.

(b) The need of research for assessment of the FLA in Dak Lak province, Vietnam.

Regarding the devolution of forest management in Dak Lak, Vietnam, the pilot program is bearing a significant mandate for both Dak Lak and the whole country in finding viable options for sustainable forest management.

The FLA is expected to obtain multiple objectives: stopping deforestation, seeking for local appropriate organization of forest management, saving government expenses in forest protection activities, contributing to improvement of livelihood of local people, and stabilizing political situation at local level. Due to having no experiences yet and the complexity of local natural social economic conditions, the Dak Lak authorities have tested allocating forest land to different types of local users: individual households, groups of households and communities. The pilot sites are distributed in different locations. (The complexity and diversity of local conditions will be discussed in subsequent sections).

What property rights have been transferred to the local users in the devolution process of Dak Lak? A bundle of rights have been granted to the recipients. Local users have 5 rights: exchange, transfer, lease, mortgage, and inherit. Based on the land law, land use right holders can exchange or transfer their land one-another. They can lease their land to other cultivators. They can bring their land use right certificates to the banks as a mortgage to get loan and they can inherit their land to subsequent generations. However, to put the law into practice, it is necessary to understand: what property rights have been transferred? How do the local people use their rights? What are different with their indigenous rights? How do they change their institutions to cope with the devolution policies?

According to capacity and depending on their requirements, each household can be allocated up to 30 hectares of forestland within 50 years. It can be renewed for another 50 years if local users continuously expect and they proved as a good manager of forest

management. A "good management" is simply defined as allocated forest land not to be destroyed in the first period. In order to receive forest land, each family has to submit a designed application form to the local authorities. Successful household or group of households is selected based on a list of criterion (more detail about this will be discovered by the research). Normally, priority is given to local ethnic minority groups, landless households, traditional village headmen, and other conditions of the locality.

Concerning collective actions, recipients are mostly ethnic minority groups, who have valuable traditional customs in organizing collective actions for a long time. Groups of labor exchange or forest protection groups are popular in daily activities of the local community's lives. They can be seen as collective actions of the local users. Before FLA, people have used to governing forest resources by indigenous regulations (e.g. spirit forests of communities, ghost forests or groups of forest protection). After FLA, we want to know whether or not their informal rules remain strong influences in protecting and harvesting forest resources. Using informal rights coupled with other forestry policies, local users are developing indigenous regulations for using and protecting forest resources. It is, therefore, likely to learn and understand how informal rules integrated in FLA policies. Experiences of local users for collective actions should be taken into account in the context of FLA.

By the end of the year 2000, the test FLA program has conferred more than 8,000 ha of forest land to 565 households, of which 415 households allocated as individual households and 150 households allocated to 19 groups of households. The recipients consist of various ethnic groups including the Ja Rai, the Mnong, the E De, and the migrants coming from the northern provinces of Vietnam. This year, as planned, the Dak Lak authorities will allocate additionally 15,000 ha of its forest resources to the local people with different forms including communities (DARD, 2000).

As presented above, while the expectations are ambitious, factors influencing local organization of forest management and conditions facilitating local robust organization have not been studied sufficiently yet. Before disseminating of the outcomes of devolution at a larger scale as well as providing experiences to the national level, the Dak Lak authorities want to know:

- In whom (individuals or group, how many people, with what distributional results) should property rights be vested?
- What kinds of property rights should be transferred – full ownership with rights of transfer, or just use rights? What do people response?
- What are the local institutions for effective governance of forest resources after FLA? (the process of forming groups, communities; local forest management strategies)
- What are the conflicts between GoV policies and local informal rules after devolution?
- What are the influences between external forces and local organization of forest management?
- Under what conditions local organization could play well their roles in forest management? What are opportunities and constraints after devolution? What are their interactions? What extent do the people decide and what extent does the government determine for collective actions?

The above questions are the key concerns of the decision-makers in Dak Lak province. In order to have plausible answers, the program needs to be scientifically evaluated. While demand of assessment is urgent and essential, the government is lacking of empirical knowledge as well as consistent methods. The outcomes of this study may not satisfy all ambitious expectations in evaluating the FLA. However, this study can contribute empirical understanding to develop the assessment method for forest FLA. Using

framework of Ostrom (1990, 1999) and Meinzen-Dick and Knox (1999), Agrawal (2000), which are explained in the subsequent parts, the study looks at factors influencing local organization of forest management, conditions for robust organization, which are mostly satisfy the questions presented above. The outcomes of study, therefore, can provide its findings to development of assessment method for the FLA in Dak Lak province.

(c) The diversity of local conditions in Dak Lak with the test of various property rights regimes in forest management.

Dak lak is the biggest province of Vietnam (1,980,000 ha) with 52% of its territory classified as forest land (1,008,261 ha). Forest resources are divided into 3 types according to its use purposes: (a) forests for watershed protection (occupies 30% forest area), (b) forests for nature reserves (18%), and (c) the forests for commerce (52%). The forest resources play a vital role in the lives of the local ethnic minority people.

Dak Lak's population is 1,8 million persons, consists of 34 different ethnic minority groups (occupies 45% of the provincial population) and one majority group (the Kinh⁴) occupies 65% the provincial population. Most of ethnic minority people are poor and their lives closely depend on forest resources. Each ethnic minority groups has different indigenous traditions in forest management. Administratively, the province has 18 districts and over 220 communes (The provincial statistical book, 1999). They are various in terms of natural environment and social economic conditions.

Recently, forest resources in Dak Lak are suffered from high pressures of agricultural land expansion and uncontrolled immigration. In comparison with the year 1995, over the last five years, the population has increased 38% mainly by immigration (on average 7.8% per year). Uncontrolled immigration causes multiple-aspect difficulties for the local authorities as well as adverse influences to protection of forest resources. Each family of new immigrants can destroy 1-2 hectares of forest for agricultural cultivation and housing estate. In addition, under impetus of the market price of coffee, local people have illegally expanded agricultural land, which was mainly converted from forestlands. From 1995 to 1999, Agricultural land has increased 58% and virtually used for development of coffee plantations (about 11.6% per year). As a result, the forest land decreases annually 23,000 ha (Tran, 2000). Lacking of local users' participation, ineffective forest management of state system, unplanned coffee expansion and uncontrolled immigration are counted as the problems of forest management in Dak Lak.

The above figures reveal the diversity and the complexity of Dak Lak's situation, which in turn strongly influence the forest conditions. Due to the diversity of local conditions and in order to withdraw the diversified lessons from FLA, for the first round (1998-2000) Dak Lak authorities have implemented the FLA in 6 districts. Each of them is different from characteristics on ethic composition, forest condition, social economic conditions and external pressures. Some districts are under high pressure of uncontrolled immigration (Cu Jut district). Other districts are influenced by illegal logging activities and shifting cultivation (Cu Jut and Ea Hleo districts), or unplanned coffee expansion (Dak Rlap district). In addition, some districts have good forests (Dak Rlap and Lak districts) while others only have poor forests (Cu Jut and Ea Hleo districts) and so on. Some villages are strongly influenced by application of new techniques, and market (Village No 6 of Krong Bong district) while other is not influenced by externality (Buon Cham, Ea Sol commune). The local people are also various on forest management traditions. Some communities still remain indigenous customs in their daily activities while others are modified by external influences.

⁴ Vietnamese population consists of 54 ethnic groups, of which The Kinh is a dominant one and occupies majority of Vietnamese population.

Interestingly, due to the complexity and diversity of social economic conditions, the local people involved in the program have different reactions to the FLA. They decided to receive forestland under different forms for forest management: individual household, group of households and community. The success of forest management differs among various forms. These lead to a lot of questions that need to be answered why the results of forest management are different while the policies of FLA are similar. It, therefore, should be taken into account that different users groups, different ways in utilizing property rights, types of forest, various informal rules of enforcement interact with national legislation in different ways produce particular patterns of forest use and protection (Gibson, McKean and Ostrom, 2000).

Variation of property right regimes selected by the local people in the pilot sites of FLA create opportunity for the proposed study to find out what factors influencing local organization of forest management under property right regimes. The questions are how can they establish forest management activities; what conditions facilitating or hindering them; such forms of local users are suitable or not consistent; and finally how they influence forest condition in a complex situation.

Exploring factors influencing local organization of forest management in different social economic environment will help the decision-makers have an in-depth understanding about the impacts of FLA in different localities. Moreover, It could provide empirical knowledge on diversity and complexity of devolution, which is essential for the FLA leaders in producing appropriate policies.

In conclusion of this section, searching for appropriate LO of forest management is essential for the successfulness of the FLA in Dak Lak, Vietnam. It is very important because it helps the decision-makers have empirical knowledge regarding devolution process of forest management in the complexity and diversity of local conditions like Dak Lak province. In addition, it will point out when and what conditions that LUs will be effectively manage forest resources. While understanding of multiple aspects on local organization of forest management is very significant and can be seen as vital conditions for the devolution, yet many questions have not been answered. At the worldwide level, searching for appropriate organization and conditions supporting such organization of forest management still remain key issues, which should be understood sufficiently and need to be studied.

1.2.2. Relevance to the theoretical matters

(a) Contributing approaches to study of LO in forest management

Before talking about contribution of this study to approaches of studying local organization, it is necessary to review summary theories of Ostrom, which are employed to design the conceptual framework for this research.

Ostrom has found out important elements to study local organization of common-pool resources. First, Ostrom defines the meaning of common-pool resources. Second, she provides a discussion about the types of appropriation and provision rules, which are relevant in the local organization of resource use. Third, she proposes a framework for analyzing self-organization and self-governing CPRs. Fourth, she considers factors influencing local self-organization, the so-called attributes of resources and users. Fifth, she uses the notion of robustness as a measure of sustainable resources management. Finally, based on the empirical evidences, she proposes the designed principles as conditions for long enduring common-pool resource institutions.

The terms of "common-pool resources" refers to resources, which can be natural or man-made resource systems. The resource is sufficiently large to make it costly (but not

impossible) to exclude potential beneficiaries from obtaining benefits from using of resources. Based on the proposed definition, Ostrom consider forests as common pool resources because some "forests" are small enough that can be protected. Excluding beneficiaries from access and use of most forests are costly (Ostrom, 1990).

To understand the process of organizing and governing CPRs, Ostrom proposes that it is essential to distinguish between the *resource system* and the *flow of resource unit*. Resources systems are understood as stock variables that a resource system has ability to produce a maximum quantity of a flow variable without harming the resource system itself (e.g. fishing grounds, grazing areas, forest blocks, and groundwater basins). Resource units are referred to the flow of resource that can be harvested per unit (e.g. tons of fish harvested from a fish grounds, cubic meters of timber harvested per a forest block). The distinction between the resources as a *stock* and the harvest of use unit as a *flow* is very useful in connection with renewable resources (like forest resources) where it is possible to define a replenishment rate. Replenishment rate is useful to calculate a harvested rate of resources so that harvesting of resource does not exceed its productive ability for long-term utilization.

Regarding interdependence, independent action and collective action of common-pool resources, Ostrom also considers the situation, in which multiple appropriators are depend on a given CPRs. When activity of one person will be jointly affected by entire activities of other appropriators. At a general level, Ostrom points out that appropriators usually face a problem of organizing. In detail, Ostrom tries to understand how appropriators change their situation from independent actions to the coordinated one, in which appropriators adopt strategies of coordination to obtain higher benefits or to reduce constraints. It is important to understand that such strategies do not require creating an organization. "Organizing is a process; an organization is the result of that process. An organization of individuals who constitute an on going enterprise is only one form of organization that can results from the process of organizing" (Ostrom, 1990,p 39). Changing from independent to coordinated or collective action is also problematic. For example, transforming may create high costs and whether or not appropriators are willing to share any of the costs from the benefits they obtained. For the way out, Ostrom propose using theory of firm and theory of state can provide an explanation in which collective action can be achieved (More detail see Ostrom, 1990. p 40).

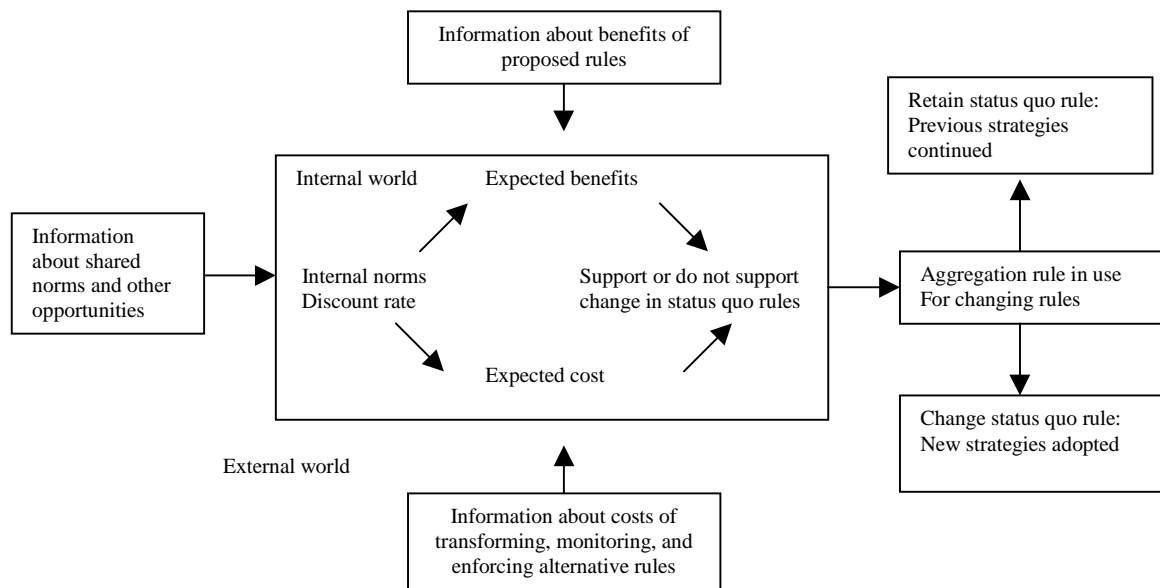
Concerning the conceptual framework for analyzing individual choice and institutional choice of self-organization and self-governing CPRs, Ostrom starts by looking at the strategies of individual choice. In doing so, Ostrom tries to answer the question how a group of local users, who are in an interdependent situation, can organize and govern themselves to obtain continuing join benefits from common-pool resources when all face temptations to free-ride, shirk, or otherwise act opportunistically. Continuously, Ostrom seeks to understand what factors influence institutional choices of local users (support or do not support changes in existing rules) in common pool resource management.

In detail, the theory of Ostrom examines rational appropriators in complex and uncertain situation, based on theory of private goods. An individual's choice of behavior in any particular situation will depend on how the individual learns about, views, and weighs the benefits and cost of actions and their perceived linkage to the outcomes that also involve a mixture of benefits and costs.

As presented in the figure below, Ostrom uses a very broad conception of rational action, rather than a narrow defined conception. The internal world, as explained by her, consists of four internal variables: expected benefits, expected costs, internal norms, and discount rate. All of them affect to the choice of individuals strategies. Using this concept of rational action, we can predict that local user will select strategies whose expected benefits

are higher expected costs. However, it is worth noting that lacking of information on variables that affect benefits and costs, such prediction has no meaning.

Figure 1: Summary of variables affecting institutional choice (Ostrom, 1990)



Based on the figure presented above, the following information is needed as they provide inputs for calculation of costs and benefits analysis: (a) information about shared norms and other opportunities; (b) information about costs of transforming, monitoring and enforcing alternative rules; (c) information about benefits of proposed rules.

Later on, using the conventional theory of common-pool resources and the evidences from field studies, Ostrom proposes two lists of attributes of forest resources and users. They are considered to be conducive to an increased likelihood of self-governing organizations:

Attributes of resources:

- R1. *Feasible improvement*: The resource is not at a point of deterioration such that it is useless to organize or so underutilized that little advantage results from organizing.
- R2. *Indicators*: Reliable and valid information about the general condition of the resource is available at reasonable costs.
- R3. *Predictability*: The availability of resource units is relatively predictable.
- R4. *Spatial extent*: The resource is sufficiently small, given the transportation and communication technology in use that users can develop accurate knowledge of external boundaries and internal microenvironments.

Attributes of users:

- A1. *Saliency*: Users are dependent on the resource for a major portion of their livelihood or other variables of important to them.
- A2. *Common understanding*: Users have a shared image of the resource (attributes R1, 2, 3 and 4 above) and how their actions affect each other and the resource.
- A3. *Discount rate*: Users have a sufficiently low discount rate in relation to future benefits to be achieved from the resource.
- A4. *Distribution of interests*: Users with higher economic and political assets are similarly affected by a current pattern of use.
- A5. *Trust*: Users trust each other to keep promise and relate to one another with reciprocity.
- A6. *Autonomy*: Users are able to determine access and harvesting rules without external authorities countermanding them.

A7. Prior organization experience: Users have learned at least minimal skills of organization through participation in other local associations or learning about the way that neighboring groups have organized (Ostrom, 1999).

These above attributes have interaction and in turn affect the benefits and costs of institutions.

In order to have good collective actions, the so-called "robust" local users organizations request certain conditions, Ostrom develops a set of conceptual tools that help to predict when collective actions will be effective or put another way, under what conditions, self-governed organizations can play their roles well to manage natural resources. Such conditions can be described: "Self-organizations is more likely to occur when forest resources are highly salient to users, when users have common understanding of the problem they face, when users have a low discount rate, when users trust one another, when users have autonomy to make some of their own rules, and when users have prior organizational experiences" (Ostrom, 1999).

Ostrom also concerns about the performance of self-governed common-pool resource institutions, rules for self-organization, in the long run. They are very important because some self-governed resources can survive for a long time, while other can be collapsed. In addition, institutions can be various across systems and time. It is, therefore, impossible to propose rules, which are used to define membership and rights they have for many generalizations. For the way out, Ostrom proposes a series of design principles, which can be seen as the conditions that help to account for the success of self-governed organizations for subsequent generations. The following design principles illustrated by long-enduring common pool resources institutions: (a) clearly defined boundaries; (b) congruence; (c) collective-choice arrangement; (d) monitoring; (e) graduated sanctions; (f) conflict-resolution mechanisms; (g) minimal recognition of rights to organize; and (h) nested enterprises (more detail see Ostrom 1999).

Regarding the FLA in Dak Lak, the proposed study will employ Ostrom's theories to consider changes on organization of forest management induced by the impacts of the devolution program. Then, the theories of Ostrom will be used for consideration of robustness of local organization. The theories of Ostrom are very useful to understand the forms of local organization as well as its robustness. However, based on the real situation of Dak Lak province, the theories of Ostrom will be modified and expanded. They are discussed in detail below:

It is supposed that before the FLA program, local users might organize their forest management strategies based on local forest conditions and indigenous traditional customs. Local people are ethnic minority groups, who have their internal norms, which are used as informal laws to appropriate and govern forest resources. Local people might have different expectations and alternatives about costs and benefit created by forest resources. Their choices of forest management strategies might be resulted by their internal world, which could be consisted of characteristics of local communities and future benefits. Different local social relations might create various forms for organizing forest management at various localities.

After FLA, local organization of forest management may be modified by the impacts of the FLA policies and other external influences. Under new policy environment, local users have different choices based on new expected costs and benefits. Local people may have various alternatives to select that lead to change existing organization of forest management or to retain them. Differing from Ostrom theories, according to the diversity and complexity of situations in Dak Lak, the devolution is not happening in isolation. It is

strongly influenced by other additional external factors like immigration, market as well as the relations between internal world and external world (relations between villagers and external forces). The so-called external world should, therefore, be taken into account.

After 3 years of managing forest resources with the property rights handed over by the government, the local users seem managing well forest resources. Yet, it is also very important to know under what condition, local organization of forest management in Dak Lak can be sustained for a long time. In detail, it is necessary to understand whether or not different kinds of institution (or other elements), which are supportive collective action at the local level. Again, the tools of Ostrom: 1) a list of attributes of both the resource and users of that make it less costly for local groups to establish "robust" collective action organization; and 2) a set of design principles that characterize such "robust" organization, will be used as a guide for consideration of the robustness of local organization and explanation of relative success or failure of community based organization. However, different political, social economic environment and complex relations between external and internal forces may request a different guide proposed by Ostrom. By considering the real situation of Dak Lak, I will finally propose a list of indicators of robustness, which are modified from the theory of Ostrom but applicable to the context of FLA in Dak Lak, Vietnam. In doing so, I can contribute to the theories of Ostrom.

In conclusion of this session, doing this research, I will employ theory of Ostrom as it is virtually consistent with the FLA conditions in Dak Lak. Then, I will develop an analytical approach, which is based on Ostrom's theory but extend it in the two ways taking both influences of government and external impacts, as presented above, into consideration. I also use the designed tools of Ostrom to consider the robustness of local organization of forest management and finally based on the empirical findings, I will propose a list of indicators, which are useful for Dak Lak and other places as well.

(b) Contributing empirical knowledge about the multiple functions of forest and the associated complexity of tenure relations.

Everyone can agree that forest resources play an important role in the life of humankind due to its multiple functions. The recognition of social and environmental services of forest – such as mitigation of global climate change, conservation of soil and water resources, enhancement of agricultural systems, conservation of biological diversity, improvement of urban and sub-urban living conditions, protection of natural and cultural heritage, generation of employment and provision of recreational opportunity, and so forth – continues to grow (WCFSD, 1999). Consequently, researches on the diverse functions of forest and its tenure relations will contribute to not only for forestry but also other sectors. However, understanding the complexity of forest tenure is also a big challenge for many authors.

Before discussing about the multiple functions of forest resources and the complexity of tenure relations, it is useful to talk about the meaning of property rights and different types of property rights. Property right is said to be a bundle of rights (Bruce, 1998). Property right is not a thing. Property right is an enforceable authority to undertake particular actions in a specific domain. Property rights define activities that some ones can take in relation to another users. In order words, if one has rights to use of resources, others have duties to observe that right. When talking about right, it always goes a long with duty. Schlager and Ostrom (1992) identify five property rights that are most relevant for the use of common-pool resources, including access, withdrawal, management, exclusion, and alienation. These are defined as:

Access: The right to enter a defined physical area and enjoy and enjoy non-

	subtractive benefits (e.g. sitting in the sun, walking in the forest).
Withdrawal:	The right to obtain resource units or products of a resource system (e.g. cutting fire wood or timber, harvesting mushrooms, diverting water).
Management:	The right to regulate internal use patterns and transform the resource by making improvement (e.g. planting seedling and thinning tree)
Exclusion:	The right to determine who will have an access right, and how that right may be transferred.
Alienation:	The right to sell or lease management and exclusion rights
(Agrawal and Ostrom, 1999)	

Regarding the complexity of forest resources, McKean (2000) asserts that it is appropriate to think of forest as a complex of many commodities with attributes of both common-pool and public goods. Forest resources do not only provide goods (timber, non-timber forest products) but also supply its functions in protecting environment (protection of soil erosion, climate change, agricultural cultivation and so forth). To explain multiple functions of forests, other authors like Gibson, Ostrom (2000) consider that if the forests were like farms grown tomatoes. Then we view them as private goods and creating individual private property rights in forests. It might be sensible but that forests also provide environmental services beyond its territory such as erosion control, flood control, conservation of water resources, and so on. In broader meaning, forest resources in the devolution process could contribute various effects not only for the local people but also for the government (social economic and political aspects). First, handing over forest resources to local users is usually based on the assumption that forests could improve livelihood of people as forests provide agricultural land, forest products and so on. Secondly, it could reduce fiscal crisis for the government in forest management or less spending out its budget for forest protection activities as responsibilities of forest protection handed over local users. Finally, devolution of forest management could contribute to the democracy process at local level as the government shifts its authorities and decision-making to rural people (Gibson and Ostrom, 2000).

Bruce and Fortmann (1988), in the research of land tenure and tree tenure matter, have addressed the concerns in searching for institutions, organizations and tenure strategy to facilitate the protection of existing trees and forest as well as the planting of new trees. Although, their findings have not provides sufficiently the complexities of tenure relations but they did supply four areas of diverse special attention – such as the tenure of land and trees affects the surrounding system; access to land and forest resources under different tenure schemes affects the standard of living people who depend on those resources; rules of tenure affect the preservation, protection, and planting of trees, and the prevailing system of tenure determines the beneficiaries and victims of forest policies and forestry projects, and sets the framework for conflicts over benefits.

Regarding the complex issues of land tenure and tree tenure, other scholars of the property rights also have contributed empirical studies and theories. Fortmann (1985) discusses about rights over trees that are often distinct from rights over land. Tree tenure consists of a bundle of rights over trees and their produce, which may be held by different people at different time. Fortmann also explains various rights include the right to own or inherit trees, the right to plant tress, the right to use trees and tree products, the right to dispose of trees and the right to exclude others from the use of trees and tree products. The theory of Fortmann provides an important issue of factors affecting rights holders. They include the nature of the tree, the nature of the use and the nature of person or group. Similarly, Gibson, McKean and Ostrom (2000) propose that considering people-forest tenure relation needs an understanding both attributes forests and community (who should have what rights). Due to having multiple functions, forest resources can be managed and

appropriated by various user groups (defined by property rights, product, location and so on). For example, local users have right to access national parks or nature reserves but they do not have rights of withdrawal and alienation. Local users may have rights of access, management, and exclusion for NTFPs in the communal forests but they cannot have right of alienation.

Ostrom and Schlager (1996) provide a table of bundles of rights associated with their positions, which are very useful to understand local property rights regimes and their holders.

Table 1: Bundle of rights associated with positions

	Owner	Proprietor	Authorized claimant	Authorized users	Authorized entrant
Access	X	X	X	X	X
Withdrawal	X	X	X	X	
Management	X	X	X		
Exclusion	X	X			
Alienation	X				

Sources: Schlager and E. Ostrom (1992).

People-forest tenure relation directly or indirectly impacts both forest condition and other social aspects of local communities. The variation of forest functions and the complexity of forest tenures request the proposed study a sophisticated consideration when looking at different organization at various locations because different forest property rights regimes could have differential outcomes in forest management based on certain environment. For example, McKean introduces four reasons to explain that why vesting property rights of forest resources in groups are more efficiency than vesting those rights either in a single individual or try in to parcel the resources into titled patches. As presented by McKean, first, some resources like forests are not easy to divide and they are mobile (like wildlife animal). Second, some large resource systems are great uncertainty. Third, on resource systems with congested and competing uses and high population pressure, coordination among recipients is essential to cope with externalities. Fourth, group ownership and group enforcement of rules can be an efficient way to cope with costs of monitoring and enforcing the rules. Due to the complexity of forest functions, when considering forest tenure matters, to whom forests should be handed over property rights, we should consider multiple related aspects (McKean, 2000).

In the context of the FLA in Dak Lak, this case study examines: what property rights of forest resources handed over to local users; how multiple functions of forest resources managed by LUs in diversities of social economic and forest conditions; how complexity of tree tenure and land tenure; and the relations between forest and property rights. By conducting an in-depth research on factors influencing local people organization of forest management. The study therefore can learn from the above literatures as a framework for understanding local property rights regimes over forest resources it therefore has opportunities to clarify the complexity of tree tenure relations in the localities and various communities. Findings from the research therefore can contribute its empirical understanding to the relevant theories.

(c) Providing empirical understanding about the politics of state forestry in Vietnam and Southeast Asia and politicized nature of forest tenure.

Regarding the politics of forest tenure, many authors have studied the politics of state forestry in the region under different manners. Many of them view devolution of forest management as a political process, in which a part of powers from government transferred to local people. It can be seen as renegotiation of the forest management institutions and

social arrangement between government and local users and among villages. It is viewed as an important element in understanding of local organization of forest management. Regarding the ideology and political economy of state forestry, Peluso (1992) has described the history of state forestry sector in Java, Indonesia. It is concerned about the control of forest land, tree species, labor, ideology and the response of forest villagers to the state control. Peluso points out that the imposition of forest state policies in forest access over time creates resistance of local forest villagers, cause the loss of trees and the change of forest land capacities for growing trees. In other cases, to explain why forest land areas are converted to agricultural land by the poor. As presented by Peluso, such counter-productive results are generated partly due to the implication of colonial-style legal and organizational structure by the government without consideration of different historical and ecological aspects. The Peluso's study leads us to a lesson that forest-based conflict or deforestation in forest management must be studied in historically specific context and political economic dynamics. For example: to understand the reasons for forest degradation, the following questions should be answered: what is the nature of the state power in managing resources? What are the material interests and ideologies of government organizations and individual agents of state in controlling these resources? How is power exercised? (Peluso, 1992)

Considering devolution of forest management as a renegotiation process among villages, devolution has both opportunities and constraints. Ganjanapan (1994) has investigated the land-titling project in Thailand. The project was designed to enhance security of land tenure for farmers. As found out from the investigation, a majority of farmers understand the benefits of titles. Yet, some of them do not want to participate to avoid losing traditional rights and benefits. The problems can be seen by contradictions between traditional practices and legal principles in relation to various aspects such as inheritance, demarcation of land boundaries, different individual benefits, internal conflicts and so forth. By learning more about the traditional system and looking at the factors influencing local people's organization such a problem of local customs versus national laws could be solved.

Regarding to the politics of state forestry in Dak Lak, Vietnam, so far, there has been not so many studies in this field as the devolution of forest management has just started in the province recently. This case study, with an ambitious expectation, hopes provide it findings about the political nature of forest management devolution, which emerges during the process of FLA in Dak Lak.

Historically, the Vietnamese forest management policies are influenced strongly by the prior colonial forest management regimes. After unification from the American war in 1975, total forest resources in Vietnam were proclaimed as the government ownership. Since proclamation, the government has established state-led forest management organizations. These state agencies, on behalf of the government, are the forest owners at the localities (in Dak Lak, 90% of the provincial forestlands are managed by the state forest enterprises. Only 10% of the forest lands are under management of the communal and district authorities and the local people have no forest land). In *de jure*, the government does not recognize communities and user groups as legal entities. In fact, they are accepted by the local people. Many ethnic minority groups, who are living in remote areas in the central highlands as Dak Lak, in *de facto* are using their traditional customs in governing forest resources. Local people respect such traditions but their rules are being modified gradually due to external impacts. It is necessary to understand how the FLA policies influence to the indigenous traditional customs both in formulating local organizations and conditions for organization's operation.

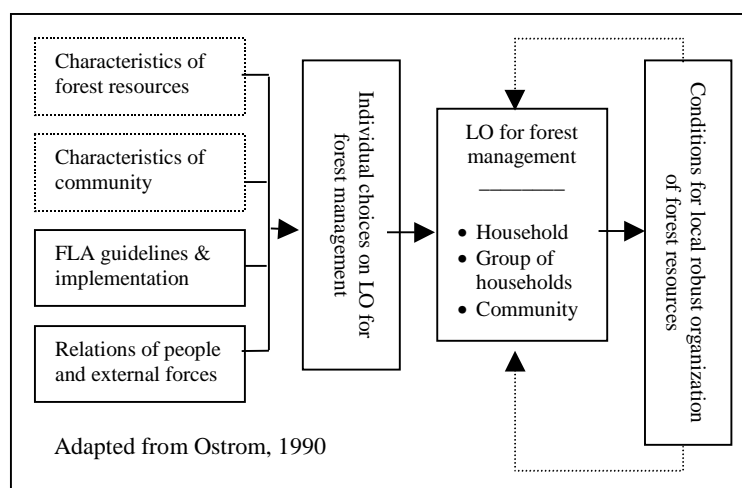
Transferring the rights of forest management over local people, as expected by the local authorities, will reduce the costs for forest management of the government and the forest resources will be better protected. However, in doing so, it also decline power of the state forestry organizations. In other words, some of state forest agencies have to change their roles from controllers into service providers to local farmers. This leads to the changes regarding the political nature of forestry sector in management of land, forests, cultures of control and so forth. The questions are how political nature of state forestry influence local organizations; the FLA policies facilitate local organizations or impose them; and how local organizations confront with the FLA program, and so on will be discovered by the study. Understanding the matters of politic in FLA is very important because the success of FLA depends on the local-state relations. External imposition by conventional state forestry manner or top-down approaches may not result a status of better forest protection (Peluso, 1992).

In conclusion of this session, by looking at the politics of forest tenure in Dak Lak somehow the study can supplement into the regional experiences like Thailand and Indonesia on the local people-state relations. Due to its complexity, the implementation of devolution has both opportunities and constraints, by conducting this case study, I hope to theoretically contribute an empirical understanding about the political nature of state forestry in managing forest resources, which are originated by the devolution of forest management in Dak Lak province. This contribution will enrich knowledge on the political nature of state forestry of the regional countries.

2. Conceptual Framework

Overall, the conceptual framework of the research is adapted from the individual choice theory and self-governance organization of Ostrom (as discussed above). Particularly, in order to understand in parts, I employ the theories of others authors like Fortman, McKean and Meinzein-Dick. Alternatively, such theories are modified to suit with the FLA context of Dak Lak province.

Figure 2: Conceptual Framework



Using the theory of Ostrom as presented in the figure 2, the study starts from investigation of factors, which influence individual choices on local organization of forest management (*reasons and dynamics to select different forms for organization of forest management*). Then, I continue to explore local organization of forest management (*rights, duties, roles and decision-making*

about use & protect forest resources). Having understood about local organization of forest management under impacts of the FLA, I will analyze what are conditions for robust organization of forest management in the context of FLA Dak Lak.

In order to understand local users' choices and the reasons why local people selected different forms for forest management activities, it is necessary to investigate characteristics of forest resources and characteristics of communities before and after FLA.

The forest-people relation will help understand what factors influence and how they influence to local organization of forest management.

Historically, local users (most of them are ethnic minority groups) have their own traditional customs in using and protecting forest resources. Understanding how local users manage forests, what are their rules and norms in using and protecting forest resources, will help understand the different changes before and after FLA. It also can help understand different changes among communities and localities.

Concerning characteristics of forest resources: I refer to forest condition (size, location, forest types, functions, forest products, and contribution of forest to livelihood of local people) before and FLA. Forest condition is closely related to expected costs and benefits of forest management. It therefore influences individual choices. For example, local people may want to formulate groups or whole village (community) for forest protection because forests are located very far from their resident areas, people cannot go to the forest to protect every days. Forest conditions also influence organization of forest management (e.g. managing protection forest is different from production forest). Local people may want to organize groups because harvesting and selling forest products under groups may be easier or more effective than an individual household.

About characteristics of community: I refer to indigenous traditions of the local people in forest management, their rules and norms in organizing, governing, using and protecting forest resources before and after FLA (e.g. what can local user do and what they cannot; who are responsible for what; what can local people decide and by whom; what are gender issues in forest management; what are the relations inside household and between villages). It also includes the opinions of local users in responding to the FLA policies and their behaviors or their changes created by the property rights and governing rules after FLA. It is also very important to know where and how local users collect information for their decision-making because information is very important and influential to individual choices.

As the theory of Ostrom, it is supposed that characteristics of forest resources, attributes of communities and the interaction between them are crucial factors influencing individual choices. They should be taken into account. However, devolution does not happen in isolation. Based on the specific situations of the FLA in Dak Lak, I will add two more factors into consideration: the FLA policies and the external forces.

Regarding the FLA guidelines and implementation: I refer to a number of issues including guidelines, processes, and its policies because all of them actually affect the local people choices. The FLA policies reveal the political nature of state forestry in devolving forest management.

Exploring the FLA guidelines will help to understand the way to implement FLA program, objectives of FLA and criteria to select target groups (e.g. what are the objectives of FLA; what kinds of forests can be allocated; who can be selected; how can local users participate in devolution process; who is involved in devolution program; what are the roles of different actors and their responsibilities; how is the coordination among actors). Investigating the FLA processes will help understand how devolution taking place and participation of the local users (e.g. how many steps are implemented; what are favorable and unfavorable elements). The FLA's policies will show us the rights and duties of recipients (e.g. what property rights are allocated to local users; what are local users' rights and their duties).

Concerning relation of local people and external factors: I refer to the influences of immigration, the government's interventions or other unforeseen issues that the research will find out.

Over the last years, due to various reasons, a huge number of people from the north provinces of Vietnam have migrated to Dak Lak province. The presence of newcomer's has strongly influenced the local traditions in forest management and their relations. For example, in order to resist encroachment of agricultural land by immigration, local people may want to receive forest land to reserve forest resources for their children without immediate benefits. Local people think that forest protection under community or group entities are more effective than individuals to resist immigrants. In order to understand the individual choices, it is essential to explore influences of the immigration (e.g. number of immigrants; their influences to the local communities; what are the conflicts between local users and newcomers; what are local user's decisions to confront with immigrants).

To improve the livelihood of rural people, many government programs (e.g. poverty alleviation program, rural development program) have been supported to the FLA areas. The government's programs influence individual choices. For example: local people may want to participate in the FLA in order to have land use right certificates or get permission to convert 2 hectares of forest land into agricultural land. After having land use right certificate, local people can access to rural development program to get loan or agricultural services. The following information is expected to collect from the government programs: kinds of programs, kinds of support, target groups of programs, how do they influence local users?

Regarding individual choices: I refer to alternatives (opportunity pool) that local users have selected to organize forest management operation (individual, group of households and community). I will investigate variables (internal norms, discount rate, expected costs and expected benefits) that local users used for their calculation (how and why they select different opportunities).

Regarding local organization of forest management: I refer to both the forms (individual household, groups of households or communities) and their rules, norms for forest management. It is supposed that the local organizations, after FLA, formulate their own forest management strategies. Each of them differently determines practices of forest protection and use based on their internal norms, discounting rate, expected benefits and cost in relation with external forces (see the figure 2 above). More detail about the variables of local organization is described below:

Local organization of forest management: I refer to the rights and duties have been officially granted to different local entities (e.g. rights to access, withdrawal, management, exclusion and alienation). It also includes informal rules developed by the local users themselves (who is allowed to appropriate forest products; the timing, quantity, location and technology of appropriation; what are obligations of users; distribution of benefits; conflict resolution). The study also explores how the local entities organize forest management activities after FLA (how can they design forest management plan; who is responsible to patrol forest; how do they allocate labor forces in the villages; how do they response to encroachment of immigrants). Local organization of forest management cannot be considered in isolation. I therefore will explore the relationship between local entities and other actors (forest protection office, state forest enterprise, the communal people committees, and forest management boards). I will find out the roles of state forest organizations, their behaviors changes after FLA.

Regarding conditions for local robust organization of forest management: I refer to conditions, under which local entities could play well the roles for collective action in forest management. The study presumes that different property right regimes, which are held by various forms of local entities, differ by internal norms, communities, forest conditions, and collective action in forest management. The study considers various extents, which should be decided by the local users or determined by the government for good collective actions. By examining and analyzing forest management strategies implemented by local users under different internal external influences and their interaction, I will find out negative and positive conditions in forest management of each property regimes. These lead to successful common property regimes the so-called conditions for local robust forest management organization. To measure the conditions for robustness, the designed principles of Ostrom will be used to verify: (a) clearly defined boundaries; (b) congruence; (c) collective-choice arrangement; (d) monitoring; (e) graduated sanctions; (f) conflict-resolution mechanisms; (g) minimal recognition of rights to organize; and (h) nested enterprises (more detail see Ostrom 1999).

3. Propositions

3.1. Main proposition

This case study has two major propositions:

- (1) The FLA leads to different changes in forest management organization at the local level.*
- (2) The forms of local organization in forest management differ in their robustness.*

3.2. Sub-propositions

To supplement the above main propositions, the case study has several supplementary propositions

- 1.1 People's choice of local organization in forest management is strongly influenced by the local social relations⁵.*
- 1.2 The local organizations have different responses in forest management (after FLA) due to different social relations.*
- 1.3 The local social relations differ between localities (in terms of organization of forest management).*
- 2.1 The robustness of local organization in forest management depends on the organization's match with the relations between local people and external forces.*
- 2.2 The robustness of local organization in forest management differs between localities, depending on local social relations and relations between local people and external forces.*
- 2.3 The relations between local people and external forces differ between localities.*

4. Measures and selection of observations

4.1. Measures

The following indicators will be used to measure the key variables of the study.

Characteristics of forest resources:

Measured by:

Physical conditions: topography, slope, climate, and location.

⁵ The term of local social relation refers to the social structure of community: household-based organization, group-based organization and community-based organization.

Size: ha

Quality: volume per ha (cubic meter)

Productivity: yield per ha (cubic meter)

Boundary: clear or not clear, recognized by topographical conditions or material positions

Location: distance from forest to road or market (km)

Products: forest products can be harvested and contributed to livelihood of the local users (timber, non-timber forest products measured by cubic meter, kg, in kind or in cash)

Characteristics of community

Measured by:

Size: number of members

Ethnic composition: percentage of ethnic groups

Role of leaders: skill and ability of village leaders, different roles between traditional and government village headmen

Indigenous forest management traditions: rules and norms in forest management

Land use practices: existing land use (ha), land use demand, land use conflicts, land use experiences

Decision making rules: who can take decisions on what fields

Conflict resolution: types of conflict in forest management, mechanisms to solve conflicts, other things related to conflict resolution

Village history: year of village establishment, changes, reasons of changes, how the changes taken places

Gender issues in forest management: roles, functions, responsibilities and activities of men and women in forest management.

FLA guidelines and implementation

Considered by:

FLA guidelines: principles or criterion guiding or directing action of the FLA (e.g. objectives & expectations of the local authorities; different kinds of forests can be allocated; who can be selected; what are criteria for selection; participation of local people; coordination of involved organizations; roles and responsibilities of different stakeholders)

FLA Processes: steps to conduct the FLA (e.g. how many steps; main activities of each step; degree of complexity of each step; expense and labor need to implement each step; how local people participate in the process; what expenditures are provided by the government or supported by others; what expenditure are covered by the local people; who is in charge each step)

FLA policies: rights and obligation of recipients (e.g. how many rights local people are granted; what are they; what obligations of recipients are; the conflicts between FLA and informal regulations)

Relations between local people and external forces

Measured by:

Migration pressure: situation of migration (number, ethnics) and its impacts to local villages, conflicts in land use, forest resources

Interventions of the government programs: major programs influence to villagers, which programs and how they influence to villagers

Illegal logging by outsiders: situation of illegal logging, how they influence to the villages, how villagers protect forest resources against outsiders

Illegal expansion of agricultural land by invaders: situation of illegal cultivation of outsiders in the village, situation of illegal sale of land (ha)

Recognition of village rules by outsiders: degree of recognition by villagers and outsiders, recognition by the government and local forestry office.

What are the roles of different stakeholders related to the FLA? How they influence to individual choice? How do stakeholders coordinate in the FLA?

Individual choices

Measured by: different alternatives of forest management based on the following variables: (why do local users participate in the FLA program? What are their expected benefits?).

Expected costs (e.g. costs for participating the meetings; costs for patrolling forest of alternatives)

Expected benefits (e.g. incomes in kind or in cash from forest; other benefits of alternatives)

Discount rate (expected incomes in the future of individuals)

Internal norms (informal principles related to making rules and enforcing rules of forest management)

Organization of forest management

Measured by:

Rights and duties of recipients (who is allowed to appropriate forest products; the timing, quantity, location and technology of appropriation; who is obligated to contribute labor or funds to provide or maintain forests; how appropriation and obligation activities are to be monitored and enforced; how conflicts over appropriation and obligation activities are to be solved; and how the rules affecting the above will be changed over time with changes in the extent and composition of the forest and the strategies of participants).

Collective action for forest management activities: (e.g. how do local users organize and conduct planting, maintaining, monitoring, harvesting; what kinds of collective actions; what are mechanisms for conducting collective action).

What sort of support do communities desire from the state and what are willingness and capacities of the state to provide these services?

Roles and behaviors of the state forest organizations after FLA

Robustness

Measuring robustness of local organization in forest management requests a bundle of conditions in a certain context. Such conditions are not universal for everywhere. They must be found out from the FLA in Dak Lak province. For the way out of this research, I will employ the designed principles of self-governed organization by Ostrom to check the robustness of local organization in forest management. Based on the practical experiences learnt from this study, I will propose the indicators, which could be used to measure the robustness for the context of FLA in Dak Lak. The bundle of indicators can be seen as follow: *The forest resources are important for local people's livelihood; local people have common understanding of the problems among members; local organization has autonomy to make some of their own rules; and local users have prior organizational experiences (Ostrom, 1999).*

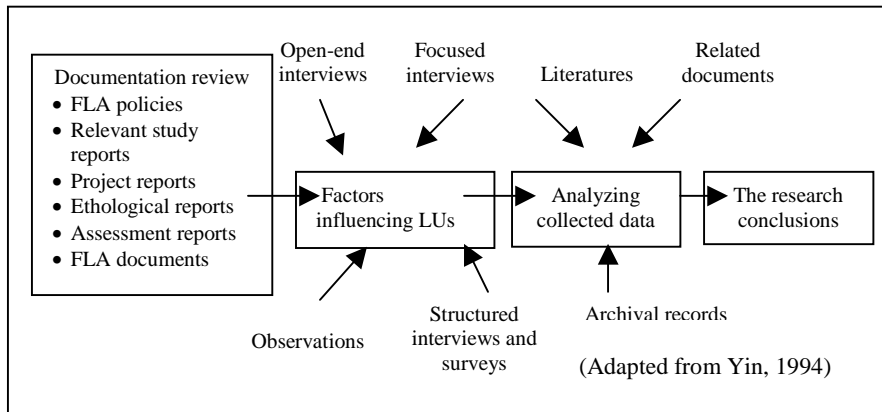
4.2. Observation strategy

In order to have enough reliable information for understanding and analysis, this study will collect data from multiple sources. They are consisted of various sources as proposed in the process and technique of observation presented below (figure 3). Different levels of data ranging from national, provincial, communal, village levels and farmers will provide inputs for the study's analysis and produce the research outcomes.

The policies of FLA, other studies, and related documents can be collected from the provincial forest departments as well as The Sustainable Management of Natural

Resources in The Lower Mekong Basin Project (SMRP)⁶, who has been supporting the Vietnamese government to promote the FLA program in Dak Lak province so far. The project documents have been developed over last six years, in which many of them can provide valuable knowledge in terms of indigenous traditions, customs of the LUs in using and managing forest resources. Working over 20 year in the research area and 6 year in the project life, experiences and documents produced by the authors related to the FLA can be seen as advantages, which help collect information providing to the research.

Figure 3: Process and techniques of observation



The process of observation consists of 2 levels as presented below:
At the village level:
 I will conduct in-depth study in 2 representative villages to have the insights on different ethnic minority

groups living in different places regarding factors influencing them in organization of forest management, the institutional and organizational aspects of local communities under impacts of the FLA.

As experiences of the author, there are three main groups of ethnic people and three forms of local organizations (household, group of household and community) involved in the FLA area living in 6 districts and over 20 villages. Two of them will be selected as samples. In order words, 2 villages will be selected for in-depth investigation to find out the key variables. The characteristics used for selection of these villages are proposed as follow:

- Diet village (Ea Sol commune, Ea Hleo District)
 - Local people are Ja Rai ethnic group
 - Forest allocated to individual households
 - Good access to market
 - Commercial production
 - Land use right certificates have been used for credit
 - Migration is around village
 - Illegal logging is a big problem
- Cham B village (Cu Dram Commune, Krong Bong District)
 - Local people are E De group
 - Village is located in the remote area
 - Poor access to market
 - Forest allocated to household groups
 - The forest is plenty rich
 - Almost no migration

After understanding the insights about local organization of forest management of 2 villages, I will expand investigation up to 14 villages (whole pilot sites of the FLA program in the first round). The information collected at this step will help researcher have

⁶ SMRP is a development project funded by GTZ, who has been providing technical support to the Dak Lak authorities in implementing the FLA program.

a broader understanding on organization of forest management regarding its systematic differences or homogeneity. The information collected by this step is necessary for the research. It enables me to build a more solid understanding over forest management traditions with an ambitious expectation that the main differences in characteristics of forest resources, communities, and different institutional arrangements will be consequences of the differences in terms of organization that lead to different property regimes.

At the household level: I will interview selected households received and did not receive FL. According to the local situation, the study will select 60 households (30 households for each village). They will be selected as random samples combined with purposive selection. Criteria for selection of households can be seen as follow:

- Be different economic classes
- Located in different locations
- Be different forest conditions
- Have different position in community
- Open to provide information
- Suggested by the village leaders

Such criterion allows the study to collect different information on factors influencing local organization. This also allows finding out understanding of local people regarding robustness of local organization in forest management.

5. Techniques for data collection

As presented above in the strategy of observation, all sources of data will be reviewed and analyzed together, so that the case study's findings will be based on the co-mergence of information from various sources including documentation, archival records, interviews, direct observation and participant observation.

Documentation of the FLA can be collected from the SMRP project as its library is keeping a lot of useful information. Among of them, the consultancy reports of the international, national consultants and myself, which are relevant to land use planning, traditional forest management, gender issues in forest management, assessment of FLA and the FLA technical papers will be priority to review.

Archival records such the FLA plans, the FLA projects of state forest enterprises, the decisions of the Dak Lak authority on FLA to household, group and community, the policies of benefit sharing and obligations of recipients can be collected from the forest development sub-department of the province. Maps including aerial photos and the detailed forestry regulations published by the government both provincial and national levels can be also found out at this sub-department as well. As a government staff of this sub-department, it is anticipated that entire related documents can be collected and reviewed easily.

The interviews will be conducted under three types of interview techniques including, semi-structure interview, opened-end interview and focused interview. The interviewees will be selected based on the criteria such as (a) representatives of communal authorities; (b) government and traditional village headmen; (c) women unions at village; (d) farmer associations; (e) communal cadastral officers; (f) communal and village communist party

members; (h) forest rangers. They are core respondents who can provide information of factors affecting LUs, the process and their rules in forming LUs for forest management.

- **Semi-structured interviews:** I will prepare questionnaires but provide respondents with opportunities to present other related issues, which they are interested in providing us. Due to a language problem, I will work together with selected informants (hereafter referred as the team) in the community, who will work as co-interviewers and translators. I will train them how to fulfill the questionnaires. Informants, who have been working with the project staff and me during last several years, will be invited. In addition, the team will create opportunities for respondents talking about the issues such as history of village foundation, its changes over time under different factors such as the war, the settlement program, and the impacts of the No 327 program⁷, land conflict resolution, and other insightful events. The questionnaires will be developed and tested at one selected village before using at a larger scale. Information, which is not relevant, will be cut out to suit with the local circumstances.
- **Open-ended interviewing:** the team will talk to individual interviewees in an informal way, just like a regular conversation but focus on the purposes of this study. This reminder is helpful to for the interviewers because, as experiences learnt from the areas, the local people will give a lot of expectations how to improve livelihood, what the government will support and so forth. Before the interviews, I will prepare a list of reminders to help the team and myself focusing to the core interests using comfortable and flexible ways.
- **Focused interview:** the team will interview respondents for a short period of time focusing on the special topics such as land use, forest management regulations, conflict resolution, spirit forests. Each village of ethnic minority communities of the central highland in Vietnam usually has some persons, who specifically know major traditions as mentioned above. Talking with these people, the team will collect in-depth understanding about the traditions, customs of the people. The interviews still remain open-ended as a conversation manner but more likely to be following the set of questions derived from the study. I will be in charge of the focused interviews as they are very important for the evidences and the needs of study.

Pebble-sorting: the team will collect small stones for this exercise. The team will use pebbles to evaluate the important degree of factors by listing out the entire identified factors and ask respondents for giving sorts and score by using pebbles. This technique will be used after the interviews and the team understood how many factors. Different ethnic minority groups and separate groups of men and women can repeatedly apply this exercise for other significant subjects assessing people's perceptions of forest. As much as possible, the team is expected to use the technique of pebble-sorting to quantify perceptions of the LUs.

Participatory mapping: the team will ask a small group of villagers to join them in drawing community maps. Each community will draw a map for discussions. The purpose of this exercise is not to produce a map instead of to use this way to collect information and observe people's discussion for the study purposes. Using the existing maps that the people obtained from the FLA as references to draw another map for discussion. Alternatively, I will try to use aerial photos, which are available at the forestry sub-department as much as possible. Participatory mapping helps the team find out how

⁷ This program was launched by the decision No 327 of the Vietnamese Prime Minister, in which the government paid farmers for their forest protection contracts.

villagers classify the land, distribution of FL, and other relevant issues. Participatory mapping is also a useful technique to identify conflicting visions and interests in land and forest resources.

Direct observation and participant observation: the team will apply at the outset of village visits as well as during the time of staying in the communities. By observing, the team has additional opportunities to collect more information that the interviews and other techniques have not yet answered. The team has been working a long time in the research areas. Therefore, for the purpose of time saving, we will not focus our efforts on this exercise instead of concentrating to other techniques to supplement or quantity information.

Table 2: Summary of main variables and related data collection techniques

Variables	Measures	Data collection techniques
Characteristics of forest resources	Size, quality of forest, productivity, boundaries, location, products, potential contribution to the livelihood	Documentation, archival records, participatory mapping, interviews, observation
Characteristics of community	Size, homogeneity, role of leaders, indigenous traditions, decision-making, conflict resolution, history of village, relations with outsiders, gender issues in forest management	Documentation, interviews, participatory mapping, pebble-sorting, observation
FLA guidelines and implementation	Principles of FLA (objectives of FLA, criteria to select recipients), process of FLA (how many steps, contents of each step, who is responsible), and policies (land tenure policies, rights and obligations of forest recipients). Forestry policies related to FLA	Documentation, archival records, interviews, observations
Relations between people and external forces	Situation of migration and its impacts to local users (land use, forest products harvesting Illegal logging and cultivation by outsiders Interventions by the government programs and policies	Documentation, interviews, observations, pebble-sorting, observation
Individual choices	Foundations to select forms of local organizations for forest management (household, group of household and community) Opportunities and constraints for organizations of forest protection and production Expected benefits (from forest resources and from forest management) Expected costs (for development of rules, enforcing the rules of forest management) Discounting rate (expected future benefits) Norms of local users	Interviews, observations, participatory mapping
Local organization of forest management	Rights and duties (who is allowed to appropriate forest products; the	Documentation, interviews, pebble-sorting, observation

timing, quantity, location and technology of appropriation; who is obligated to contribute labor or funds to provide or maintain the forest; how appropriation and obligation activities are to be monitored and enforced; how conflicts over appropriation and obligation activities are to be solved; and how the rules affecting the above will be changed over time with changes in the extent and composition of the forest and the strategies of participants).
 Collective action (Forest management plans defined by the local users)

Robustness

Contribution of the forest resources to the livelihood of local users, coordination of local users in using and protecting forest resources, the autonomy of local users in making their rules, experiences and skills to organize forest management activities of local users
 Sort of support (technical, credit, legal recognition)

Documentation, interviews, observation

6. Techniques for data analysis

To analyze collected data, several techniques will be applied according to the findings of case studies

For the two in-depth studied villages: the research will use descriptive analysis and explanation building to provide an understanding about the factors influencing local organization in forest management as presented in the conceptual framework of the research. In detail, I will focus on the institutional aspects of the local communities before the FLA and their institutional changes after FLA. I will describe and explain the process as well as the principles of forming local organization for forest management such as people's opportunity pools, available opportunities, associated benefits and costs and the influences by internal, external factors.

For the fourteen study villages: I will use comparative technique by making a cross-tabulation. This technique will help to search for systematic association between potential influencing factors and forms of local organization. Also, it will help to search for systematic association between potential conditions and robustness of local organization. Explanatory analysis technique will be combined to explain differences or similarities of local organization in forest management in the localities.

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