Looking at the prospects of community forestry in the Terai region of Nepal

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The paper explores some of the reasons of slow progress of community forestry in the Terai regions of Nepal. One of the reasons is identified as the lack of criteria, tools and methods to understand the social and ecological systems together with appropriate institutional attributes that are required for an appropriate management regime such as community forestry. A set of criteria in identifying the appropriate regimes and the testing of these criteria in four Community Forest User Groups of Nepal are discussed. The paper suggests the social, ecological and institutional criteria that could be useful to find out the ways in order to negotiate in choosing the appropriate forest management regime in the Terai and elsewhere.

Keywords: Commmunity forestry, Terai, CFUGs, forest management

Participatory forestry programme evolved in Nepal in 1990s with the evolutionary changes in forest policy, which was legitimized in 1993. So far, about 11,000 Community Forest User Groups (CFUGs) have been formed in the country, covering approximately 600,000 ha of forest land. However, until April 2000, there are only about 900 CFUGs that are formed in 24 Terai and Inner-Terai districts covering about 150,000 ha. In total, about 12% of the total forest land has been handed over in the country as community forests, of which 9.1% area is in the 51 hill districts, 2.1 % in the 7 Inner-Terai districts, and 0.8% in the Terai districts (Pokharel and Amatya, 2000). Since only about 3% of the forest land which is handed over as community forests in Terai and Inner-Terai region in sharp contrast to hills where it is 2 times more. There is extensive body of knowledge and experience on Community Forestry (CF) in the hills, however little is known about the potential of community forestry in the Terai (Chokrobarty *et al.*, 1997). Therefore, appropriate process, tools and techniques have to be developed in order to accelerate the process of forest hand over in the Terai.

Looking at the complexity of the forestry problems in the Terai, it is realized that the Department of Forests (DoF) alone can't address the issues so that the protection and the management of the Terai forest could be undertaken in a collaborative way by involving stakeholders concerned. In line with this, some District Forest Officials and staff, local leaders, NGOs and donors are advocating the implementation of active community forestry programme in the Terai region with an appropriate process and methods so that poor, women and marginalized group of people could participate and benefit from the CF. Despite the willingness and interests of various stakeholders, the promotion of community forestry in the Terai region has been very slow. The reasons and motives of the forestry staff to handover or not to handover forests for community-based management are different in different districts. Pokharel and Amatya (2000) have listed down a number of reasons by which about 1,50,000 ha of national forest are handed over to communities in Terai and Inner-Terai. Some of the reasons are reported as the following:

- Some of the motivated DFOs who had hills' experience on Community Forestry (CF) facilitated community leaders to takeover the national forests as CF. They believed that CF could be promoted in the Terai within the existing legal framework and there was tremendous potential for it.

- In some places, DFOs handed over forests to ease the pressure of the elites and local politicians who were aware of CF and its potential benefits to them.

- Some DFOs handed over national forests to stop further encroachment and illicit cutting of trees, so that their life would be relatively easy.

- Many DFOs have handed over plantations at canal bank and degraded sites that the forestry administration wanted to hand over to local people as a cost-effective way of protection and rehabilitation of forest land.

- In few places, bi-lateral projects and NGOs have facilitated the hand over process and DFOs have legitimised such groups.

Similarly, there are number of reasons by which the progress of community forestry and their handover process in Terai become slow. These include the following.

- Policy documents such as the Master Plan for the Forestry Sector and the Agricultural Perspective Plan gave focus to the community forestry in the

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hills and the commercial forestry in the Terai. Accordingly, the policy action of the current ministerial concept paper on community forestry in Terai states that only small patches of isolated forests will be handed over to the community.

- The experience of hill model of community forestry can not be fully replicated in Terai. The Terai differs from hills in terms of forestry history, ecology, economy, infrastructure development, and forestry administration, therefore, bears direct implication to the appropriate modality of community forestry in the Terai. Although, there are some committed professionals who are willing to examine the modalities, there are still very few who have innovated and piloted different models of community forestry in the Terai. Therefore, there are no mechanisms developed and tested yet to judge the scale of willingness and interest that grass-root level users have in the Terai particularly, in taking over the rights and responsibility of forest management.

- Terai forests are located in continuous belt and settlements are relatively further away, forests are not scattered and intermixed with settlements. As there are no clear boundaries of respective users with that of forest, it is very difficult to identify and accommodate such highly scattered dwellers as forest users. Some have raised the issue of equity, particularly the use rights of those distant users who are both the indigenous populations, as well as people from nearby towns, immigrants and illegal settlers.

- There is a huge timber market across the border, and it is reported that some timber is supplied in the market through illegal timber traders, many of them are connected to local elites who are likely to be in leadership positions of the potential "Forest User Committee". Unless the level of awareness about community forestry among users is raised before forest handover, there is a chance of misuse of authority by the "committee" and it is also likely that the benefits will be captured by some elites only. The extension modality to ensure participation in the Terai has yet to be explored so that management capacity of the local community to protect, manage and use the productive forest of the Terai could be ensured.

- One of the critical problems of Terai is the forest encroachment, for which a significant amount of time, resource and energy of the forestry administration is spent. There is no clear vision, how the issue of encroachment will be addressed and the encroached area of the Terai forest land could be recovered, once the area is handed over to the community. Both should be taken forward simultaneously.

- The Terai still has the greatest economic potential of commercial timber production in order to contribute to timber supply to urban cities and national treasury. It is not clear how it could be compensated if the Terai forest handed over to the communities.

- The conventional view to see people from the eyes of old fashioned forestry administration is, to some extent, prevalent in the Terai, where the DoF has continuously become custodian. It is because of the fact that historically the main tasks given to forestry officials in Terai are policing and patrolling. This role of forestry administration is still exists in the Terai, specifically to protect the forest land against encroachment. Unless the role given to the forestry administration is transformed from police to extensionist and facilitator as in the hills, forestry administration will have very little time and resources to concentrate their efforts to promote community forestry and technical aspect of forestry in the region. Consequently, scaling up the community forestry and technical management of the forests will continuously get low priority. DoF's institutional set up and the orientation of staff in Terai is still for policing role, as the presence of large number of armed-forest guards in the Terai districts indicates.

In contrary, some advocacy groups view that there is high potential of success of community forestry in the Terai region as in the hills. These groups blame the government for obstructing the momentum of community forestry in the Terai. These groups tend to present the "good examples" of community forestry in the Terai and take a cynical view to the approach of 'scientific forestry' to be applied to government-managed forests. It is yet to see how these advocacy groups will work together with the government in order to explore the possible options, tools and techniques to enhance various forms of forestry in Terai, including community and government-managed forestry. Many believe that different forms of forest management regimes are essential by involving a wide range of stakeholders in Terai, so as to optimize the production capacity of the Terai forests.

There are many suggestions and recommendations on how the scaling up community forestry in the Terai could be done. Kanel (1993), for example, has suggested that criteria need to be identified, so as to delineate categories of forest including community forests both on ground and map. Similarly, Pokharel and Amatya (2000) have suggested the idea of piloting various types of management regimes in all kinds and quality of forest to learn more about the best management options in the Terai, so that scaling up the appropriate management regimes could be done

on the basis of first hand learning. Shrestha and Budathoki (1993) have pointed out that policy, institutional and socio-economic issues have to be considered in choosing the appropriate management regime in the Terai.

So far, there are no criteria that are set in policy guidelines on which forest should be handed over to the local community and which forest should be retained under the state control and management. The Operational Forest Management Plan (OFMP) has delineated potential forest for the purpose of community management by using only criteria of "proximity to village and the forest crown cover". However, DoF staff and various stakeholders explicitly commented on the plan saying that the plan doesn't match with the field situation.

Realizing the need of criteria for the selection of potential community forest in the Terai region, the paper suggests some criteria to identify an appropriate forest management regime so as to facilitate community forestry implementation in the Terai region.

Methods

Literature were reviewed on the criteria of effectiveness of community forestry in the Terai. Key informants (Forestry staff, I/NGOs and local community members) were interviewed for the identification and validation of criteria. Free listing method was used in order to prioritize and rank them.

Criteria of potential community forestry regime

Development of social, ecological and institutional criteria

There needs to be a certain criteria that help decide the potential forestland to be managed under community forestry regime. The criteria are classified into three categories, namely, social, ecological and institutional.

These criteria have been developed on the basis of field study and through literature analysis of Ostrom (1990, 1999), Hobley (1996), Hobley and Shah (1996), Paudel (1997), James and Karen (1997), Pokharel (1999) and Arnold (1998). These criteria have been tested in the case studies. The application of these criteria has though aimed for the Terai region of Nepal and can be applied in other areas with necessary modification.

A total of four CFUGs were selected for the development and testing the criteria. The two are considered to be the effective and the rest two are

ineffective in terms of their characteristics and functioning. The two effective CF were: Sankarnagar CFUG of Butwal (Pokharel, 1999) and Malati CFUG of Saptari (FUG awarded by the DoF in 1998 as the best CFUG). Similarly, the ineffective CFUGs were: Ghurmi CFUG of Siraha (according to DFO and GTZ) and Nawajyoti CFUG (CF Division and DoF office).

As there are no strict quantification of the criteria, the classification of positive and negative characters of the criteria is subjective. For the convenience, nevertheless, the criteria are classified as "highly preferred", "medium preferred" and "least preferred". The boundaries between the different classes of criterion are fuzzy and likely to be adjusted, according to particular situation.

The least preferred characteristics of the criteria do not mean that the community forestry is unsuitable, rather it indicates that the higher the number of criteria showing least preferred, the higher the conditions that should be met before handing over the forest. Some of the characteristics of the criteria are indicated by "©" means critical and which alone may make community forestry ineffective.

Social criteria

Although the characteristics of an appropriate community which is willing, able and has capacity to manage local resource cannot be identified on the basis of the factors that are listed in the Table below. Functioning of a community depends on the interplay of different factors, which determine the degree or bond of social cohesion. The Table 1 gives a basis for the ranking of social criteria.

A community would be highly suitable for the collective action if all of its factors or criteria were met and is termed as "highly preferred". However, such communities are ideal. They may consist of different combination of above factors, which make the judgment of suitability difficult for the collective action. In such case, quantitative method would also be helpful. For example, if an addition of rank value of criteria is more than 14 (7 criteria multiplied by medium rank value), the community would be appropriate for community forestry, provided the critical criteria are not considered.

Secondly, a subjective judgment could be applied for conditions unless they have critical criteria. For example, if a community doesn't have any experience of collective action, forest still can be handed over with a condition that adequate extension support is supplied to the community before the forest will be handed over.

Table 1: Basis of ranking social criteria for community forestry in the Terai.

Class/Rank	Size (HH)	Dependency on FPs	Spatial distribution	Homogeneity	Social conflicts	Past experiences	History of settlement
Highly preferred (3)	Up to 100	75-100% (FW, FO & T)	Less than 2 km range	Homogenous	No past and current conflicts	Has past experiences of collective efforts on forestry related	Long history of settlement. All are traditional domicile/dwellers
Medium preferred (2)	100-300	25-75% (FW and T)	2-3 km range	Vertical or horizontal heterogeneity[3]	No record of conflict history but present conflict on resources	Has past experiences of collective action for other than forestry related	At least one generation old or older or at least 10 year old settlement with some new immigration
Least preferred (1)	300 and more ©	Less than 25% (T)	More than 3 km ©	Horizontal[4] and vertical heterogeneity ©	Past and present conflict on culture and resource ©		Recent dwellers less than 10 years older with incoming immigrants

© : *Critical criterion that alone may make community unsuitable for collective action.*
FPs: *Forest Products; FW = Fuel wood; FO = Fodder; T = Timber*

Ecological criteria

Like social appropriation, there needs to be an ecological appropriation for the successful community forestry (Table 2). The "highly preferred" resource factors would make it most suitable for community management. However, as in the case of social factors, it is ideal to find all the resource factors highly suitable in the same area. Combination of factors, therefore is expected. In such cases, any forest that has a total of more than 8 criteria rank met, value would be suitable for the community management without considering the critical criteria.

Institutional criteria

Institutional attributes are the most important factors for identifying the appropriate forest management regime (Table 3). It gives an additional support to ecological and social suitability for forest handover to the local community. There is a high possibility of effective collective action through appropriate institutions. Similar to ecological and social criteria, higher the positive aspects of institutional criteria, higher the chances of collective action being effective. Lack of traditional institutions indicates that there must be a rigorous process of extension

Table 2: Basis of ranking ecological criteria for community forestry in the Terai.

Class/Rank	Accessibility	Area and boundary	Resource abundance	Forest types
Highly Preferred (3)	Overlapped forest and village	Any isolated forest with manageable area and clear boundary	Resource is getting destructed due to lack of protection and uncontrolled harvesting. Resource is becoming scarce for local community.	Any types of plantation and degraded natural forest.
Medium Preferred (2)	Border of village and village joined and not more than 3 km apart.	Part of big blocked forest having clear boundary of traditional use.	Any resource that is vulnerable to destruction in the near future	Any types of natural forest that doesn't require hi-tech management with low initial investment or doesn't need strict protection for wildlife and biodiversity conservations.
Least Preferred (1)	Village and forest far apart making difficult daily monitoring of the forest ©	Big blocked forest which is difficult to separate for community and state management ©	Resource that doesn't have protection and management problems for the state. Abundant resource around for the community purposes.	Mature well stocked Sal forest that needs hi-tech management with high initial investments. Forest that is sensitive for wildlife/biodiversity and needs strict conservation measures.

[3] Heterogeneity having clear hierarchy among different groups e.g. ethnic heterogeneity (Paudel, 2000)
[4] Heterogeneity having no clear hierarchy among different groups e.g. religious heterogeneity (Paudel, 2000)

to help make the community members aware of collective action before handover of the forest resources takes place. Building social institutions from the scratch is one of the difficult jobs in Social Science. It requires a lot of time, efforts and money especially for extension education for raising awareness. Therefore, in such community, forest should be handed over to the local community only once the local institutions are built and institutionalized their functioning mechanism for communal benefits.

These criteria have been useful to determine the suitability of a resource to be managed under community forestry. Matrix below shows summary of the criteria against the tested attributes of the four CFUGs. The results from analysis of the performance of the groups against criteria is given in Table 4 and in detail in Appendix 1.

Table 3: Basis of ranking institutional criteria for Community Forestry (CF) in the Terai.

Class/Rank	Community willingness	Traditional management system	Traditional decision making and conflict resolution system	Political and market pressure
Highly Preferred (3)	Most of the members of community are willing to manage forest	Traditional forest management and protection systems exist	Traditional decision making and conflict resolution systems exist e.g. decision making for rotational rice cropping in village	No internal as well as external political influences and interests on resource management. Little or none market pressure to the resource.
Medium Preferred (2)	Few leaders of the village have expressed the willingness	Traditional system existed but suppressed due to invasion of new dwellers	Traditional decision making system doesn't exist but internal conflicts are managed by local leaders or elite e.g. resolution of conflicts due to destruction of crops by someone's cattle	No external pressure from politics and market. Internal political influences on CF to hold decision-making power in the community.
Least Preferred (1)	Nobody has expressed willingness	Traditional system never existed	Traditional decision making and conflict resolution systems don't exist	Both internal and external political and market pressure to the resource. Central level politicians seek favor from community leader who monopolize decision-making power in resource and its benefits.

Testing the criteria in four CFUGs

Testing the set of social, ecological and institutional criteria mentioned above have been done in the four CFUGs, two of which are considered to be effective and the rest two are ineffective in the management of forest resources for in distributing the benefits among members.

Of the three sets of criteria, social criteria are found to be very important, since the various indicators of social cohesion help determine whether it is worthwhile to attempt collective action at the community level. If the divisive factors are much stronger than the cohesive factors, a collective activity at the community level will probably not be

Table 4: Ranking of CFUGs studied on basis of social, ecological and institutional criteria.

CFUGs	Social criteria	Ecological criteria	Institutional criteria	Total score
Sankarnagar CFUG, Rupendehi	13* (21)	9 (12)	9 (12)	31* (45)
Malati CFUG, Saptari	17 (21)	10 (12)	8 (12)	35 (45)
Nawajyoti CFUG, Jhapa	14* (21)	7 (12)	6 (12)	27* (45)
Ghurmi CFUG, Siraha	12* (21)	7* (12)	7 (12)	26** (45)

*Critical criterion exits.

successful (James and Karen, 1997). One of the most important criteria for participatory forestry is degree of social cohesion, which can be defined as the bond of relationship between and among individuals in society. Effective participation and collective decision-making depend on the degree of relationship of individuals in society.

The degree of social cohesion is determined by the factors such as population size, spatial distribution of households, age of settlement, and homogeneity of community. However, the degree of cohesion is a relative term and can only measured by ordinal scale as high, medium and low.

It is also found that interplay of criteria is also equally important and essential than the effect of a single criterion. A single criterion generally doesn't have significant roles for the effectiveness of the community forestry unless it jeopardizes the whole system. For example, the general argument is that the smaller the size of users groups, the more likely to be effective. The case of the Sankarnagar FUG of Bhairahawa and the Ghurmi CFUG of Siraha, however, show that the size of the household members is not a determining factor for its effectiveness.

Conclusion

To conclude, to be an effective CFUG, there needs to be combination of social, ecological and institutional attributes. The appropriateness is a function of different factors as follows

Ecological appropriation $= f$ (accessibility, area and boundary of forest, abundance)

Social appropriation/ cohesion $= f$ (number of users, spatial distribution of households, dependency on forest, heterogeneity, past experiences, settlement history), Institutional appropriation $= f$ (Community willingness, traditional management system, traditional decision making and conflict resolution system, political and market pressure).

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Appendix 1

Criteria	Sankarnagar	Malati	Navajyoti	Ghurmi
1. Social				
Household size	1*	2	1*	1
Dependency on forest products	2	3	3	2
Spatial distribution	3	3	3	1*
Homogeneity	1	2	2	2
Social conflict	2	3	2	2
Past experiences	3	2	2	2
History of settlements	2	2	1	2
Sub total	**14**	**17**	**14**	**12**
2. Ecological				
Accessibility	2	3	3	1*
Area and boundary	2	3	2	1
Resource abundance	2	2	1	3
Forest types	3	2	1	2
Subt total	**9**	**10**	**7**	**7**
3. Institutional				
Willingness of community members	2	3	2	2
Traditional management system	3	1	1	2
Traditional decision-making and conflict resolution system	3	2	2	2
Political and market pressure	1	2	1	1
Sub total	**9**	**8**	**6**	**7**
Grand total score	**32**	**35**	**27**	**26**

* Critical criterion exists