

Silviculture for Enhancing Economic Contributions of Community Forestry: Experience from Lamjung District

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1. Context

Community forestry is recognized globally as a trailblazing innovation in promoting effective community-based forest governance. It has tremendously contributed in increasing forest stock, promoting biodiversity and offering enormous environmental services. Restoration of ecological integrity, establishment of robust and democratic institutions, strengthening local democracy, empowering marginalized communities are some of the remarkable ecological and social outcomes of community forestry. However, there is virtually no management in Nepal's forests which in turn result to low forest productivity (also low economic performance). Therefore, economic benefits of community forestry are far below its potential, thereby contributing little in supporting local (and national) economy and livelihoods of the poor. Community forestry user groups (CFUGs) have been protecting their forests despite local community's decades long forest protection, they are not benefiting much from the forests.

Government is trying to promote silviculture based forest management and has promulgated Scientific Forest Management Guideline in Nov, 2014. In this context, this study is conceptualized to understand how silviculture based management can enhance economic benefits of community forests.

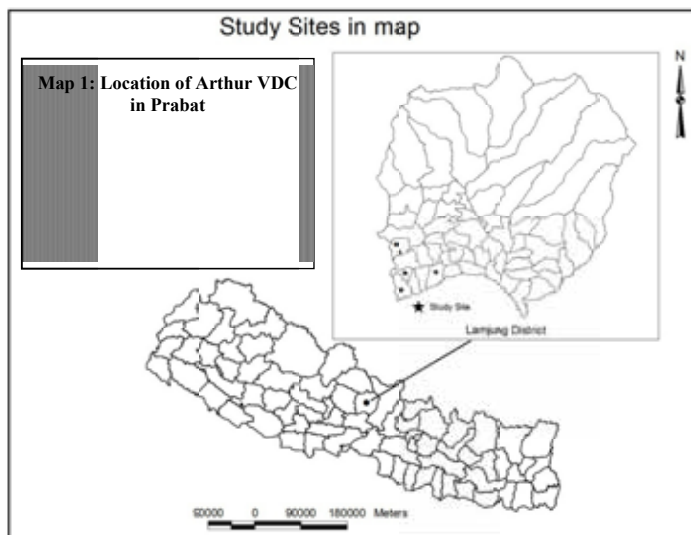
2. Objective

The objective of this study is to compare and contrast economic return(s) from the community forests before and after the application of silviculture based forest management (shelterwood system).

3. Study Area

The study was carried out in five community forests located in Ishaneshwor, Samibhanjyang, Jita and Ramgha villages in Lamjung district (See Map).

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4. Methods

The study methods involved the review of the operational plans (OP) of five CFUGs of Lamjung and analysis of their harvesting and sales records. The year-wise income projection from the sale of timber and fuelwood are copied from OPs and analyzed to calculate yearly cash flow of next five years (FY073/074, 074/075, 075/076, 076/077 and 077/078). Similarly, harvesting and sales records of CFUGs of the last five years (FY 068/069, 069/070, 070/071, 071/072 and 072/073) have been examined to figure out the yearly income of the CFUGs previously. The data are then verified with the records maintained at the District Forest Office (DFO). The timber quantity and cash flow of the next five years (projection) are compared with the same data of the previous five years (actual).

5. Study Limitation

The study is based on the desk review of the OP and meeting minutes of CFUG and relevant documents of DFO Lamjung. It does not cover a host of governance challenges; particularly the institutional practice that shape actual amount of harvest and sale of timber.

6. Findings

Table 1. Sale and distribution of forest products for internal consumption (previous years).

CFUG	FY	068/ 069		069/ 070		070 /071		071/ 072		072/ 073		Total
		Qty	Price	Qty	Price	Qty	Price	Qty	Price	Qty	Price	
Parajuli Besi	Timber	458.5	4585	1161.9	22458	1232.67	24580	643.94	16671	330.08	8252	76546
	Fuelwood	200	0	250	0	250	0	200	0	300	0	
Manaka mana	Timber	137.6	3440	838.26	20825	409.8	10247	320	8000	1836.9	175640	218152

CFUG	FY	068/069		069/070		070/071		071/072		072/073		Total
		Qty	Price	Qty	Price	Qty	Price	Qty	Price	Qty	Price	
	Fuelwood	0	0	0	0	0	0	0	0	500	5000	500
Akala	Timber	590	22550			170	6800	250	12965	2907	116280	158595
	Fuelwood	800	8000			0	0	655	6550	1000	10000	24550
Badahare	Timber		2550	184.48	4612	188	6775	226.81	8971	1563.46	62538.4	85446.4
	Fuelwood											0
Deurali	Timber	370	2760	210	4760	115	2750			135	3375	13645
	Fuelwood											0

Table 2. Income and cost of CFUGs of external sale (previous years).

CFUG	FY	068/069	069/070	070/071	071/072	072/073	Total
Parajuli Besi	Income	495825.2	0	290555	0	0	786380.16
	Cost	141433		82299			223732
Manakamana	Income	1883797		165432			2049228.6
	Cost	557865		47624			605489
Akala	Income		436838.7	435656.1		935476.5	1807971.32
	Cost		114200.5	130867		276080.5	521148
Badahare	Income		277086		493913	159475	930474
	Cost		94796		144516	45610	284922
Deurali	Income			595963.1	713678.8		1309641.92
	Cost			179084.5	204400		383484.5

Table 3. Users are benefitted from heavy discount in timber purchase for internal consumption.

CFUGS	Amount of timber sale (cft) outside group	Amount of timber sale (cft) internally within the groups
Parajuli besi	652.6	3827.09
Manakamana	1763.8	3542.56
Akala	1084.77	3917
Badahare	734.9	2162.75
Deurali	783.23	830

CFUG records of last five years show that the amount of timber distributed within the community is always greater than the amount of timber they have sold outside through open tender (see table below). However, record of income from external and internal sale shows that the users are getting timber in highly subsidized rate, far lower rate than the market price. Consequently, income from the sale of forest product outside CFUG is higher than from the internal sale even if the amount of timber distributed internally is higher than outside sale.

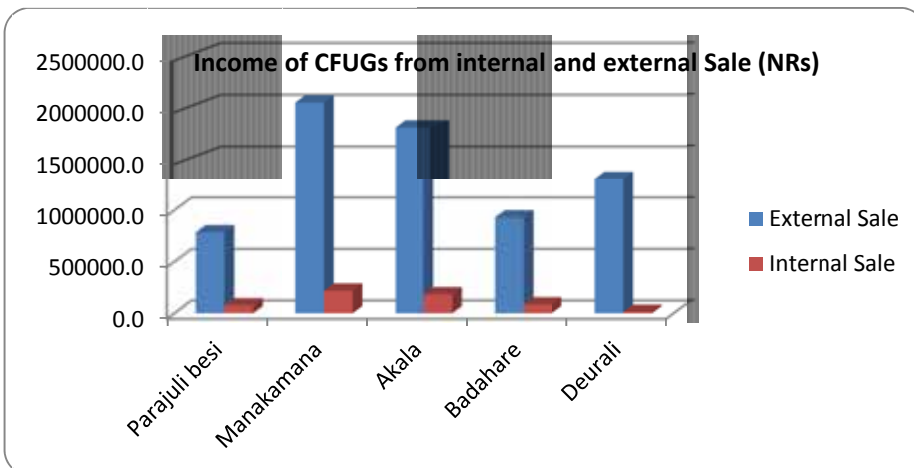


Figure 1. Silviculture based FM is profitable, and has potential to generate income and employment.

The year wise timber and cash flow projection of operational plans show that forest management according to the silviculture prescription is profitable. The benefits are higher than the associated costs. The investment (cost) in forest management, fire-line, regeneration management, forest protection, plantation etc is assimilated locally and therefore increases the income and employment opportunity locally.

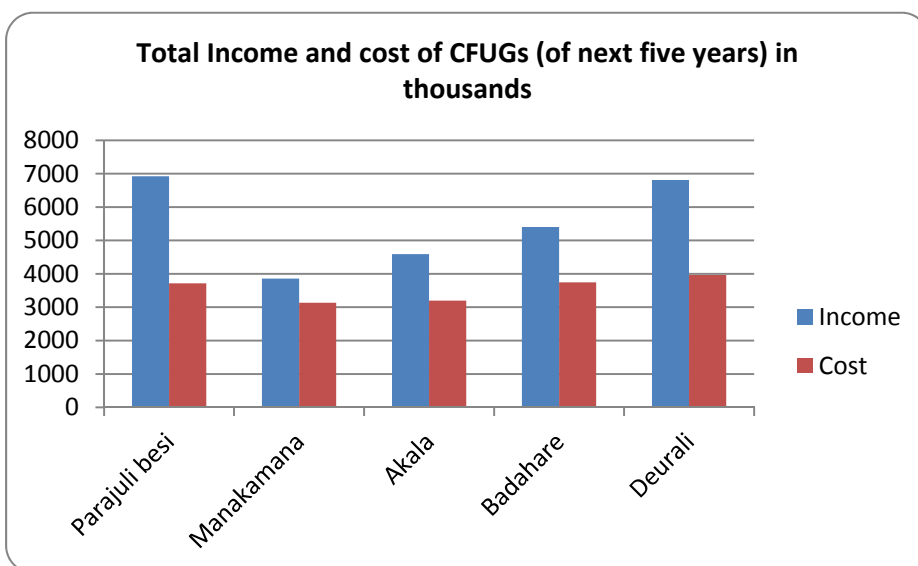


Figure 2. Investment in Silviculture based forest management is viable.

Net present values of the year-wise income and costs and the financial analysis provided in operational plan have shown that the investment in the silviculture based forest management is viable. Benefit cost ratio of such investment is at least 1.38 and 2.1 at most.

SN	CFUGs	Net Present value of benefits (NPB)	Net Present value of costs (NPC)	Benefit/cost ratio
1	Parajulibesi	896,830	427,460	2.1
2	Manakamana	495,250	563,300	1.38
3	Akala	610,150	365,900	1.66
4	Badahare	693,310	435,500	1.59
5	Deurali	883,280	458,960	1.92

Huge potential in increasing timber production and supply

The operational plans developed and approved according to principles of silviculture have shown a clear potential of huge increase in the timber supply from the forests. The comparison of timber supply in past five years (AAC based management) and next five years (silvi based management) shows that the later supplies far greater amount of timber than the former.

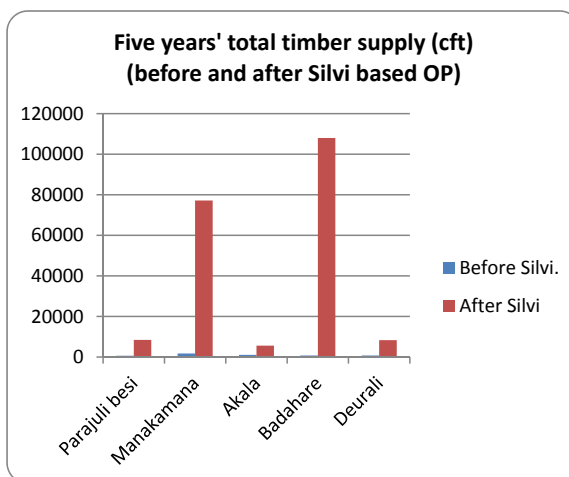


Figure 3. Status of timber before and after silviculture.

7. Conclusion

1. Silviculture based forest management has potential of substantial increases in production of forest products and revenue.
2. Increased yield due to silviculture based management will provide substantial amount of timber supply to the market which in-turn support in import substitution of timber.
3. Such management helps to increase income and employment in the community and contributes to local (also national) economy.

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