

Farmers' new strategy: myth or reality

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This paper examines the existence of a 'new strategy' supposedly adopted by the farmers under the rapid socio-economic transformation of rural societies in Nepal. While assessing the validity of the forecast regarding the reduction of pressure on the forests under a changed socio-economic context, the study categorically rejects the adoption of new strategy by the farmers and the rosy depiction regarding the forests. The study which was conducted in forty-two households of Badikhel Village Development Committee, Lalitpur, has found that, in villages, the labour relations are culturally determined, and the predominance of cereal cropping, the income source and other factors determine the purchase of agricultural inputs, mostly fertilisers etc. The study recommends a subsistence oriented community forest policies in Nepal.

Key words: Marketing, community forestry, socio-economy

Marketing has so far remained an ignored dimension of community forestry in Nepal. The government is blamed for neglecting the commercial aspects of community forestry (Malla, 1993). This criticism stems from the fact that the rural people are increasingly engaged in off-farm cash earning activities (APROSC, 1980; Banskota, 1989). Yet, such aspects are not recognised in the community forestry policies (Malla, 1993). The latter focuses largely on meeting the rural people's subsistence needs for fodder, firewood, and timber (Anonymous, 1988; Manandhar, 1980). It is argued that the rural agrarian societies in Nepal, are rapidly transforming under marketing influences. The close subsistence economy is thus changed to an open market economy. Despite agriculture modernisation, farm incomes barely meet the subsistence needs. So new strategies are pursued by the farmers that include:

- 1) Off-farm employment
- 2) Growing cash crops to support purchase of fertiliser
- 3) Reducing either number or type of animals
- 4) Abandoning cultivation of crops that demand high labour inputs
- 5) Leaving marginal land uncultivated
- 6) Sending children to school, etc.

Thus marketing influence has resulted into:

- A reduction in the number of livestock accompanied by a decrease in the demand of fodder and leaf litter.
- An increase in firewood and timber demand due to the increasing number of commercial enterprises using these products.

It is rosily depicted that the pressure from the community forest may reduce in future. The reasons being the farmers' decision to involve themselves in various off-farm cash-earning activities, not to cultivate some of their marginal lands, to reduce livestock population and adopt stall-feeding, and to grow trees in the private land. The crux of those arguments is while community forestry is oriented towards meeting the subsistence need, the rural people have moved away from such an economy. Hence, the strong urge is "rural people are interested in income that may be earned through off-farm employment, so community forestry should heed to this change and accept commercialisation" (Malla, 1993).

Methodology

The study area comprises of 112 households located at Ward No. 3 and 4 of Badikhel Village Development Committee (VDC) of Lalitpur District. The Paharis, a Tibeto-Burmese group is the main inhabitant followed by the Brahmins - an Indo-Aryan group. A household survey was administered in forty-two households

stratified into two wealth-classes. The household survey questionnaire covered mainly on the practice of voluntary exchange of labour (Parma), purchase of chemical fertiliser, etc. After pre-testing, the questionnaire was designed in MS Access database form. The survey information was probed at prima facie using MS Access software and was later analysed by SPSS, mainly Chi-square tests. Pearson's Chi-square test was employed mainly to determine the significance of the differences but the validation rule often required other tests such as the Fisher's exact test.

Observations

" New strategy" : myth or reality

The study area is undergoing a rapid socio-economic transformation due to strong market influence. The following are the major observations that caste doubt over the existence of the 'new strategy':

1. **Off-farm employment:** The out-migration of people, due to the off-farm employment opportunities elsewhere, is rather rare. Self-employment through *Betbans* (Bamboo-saddler) work, is pursued even by the male members, and therefore contributes substantially to the farm-household income. However, the market alone does not control the adaptation of such works by the households. The Brahmin households differ significantly from the Paharis in self-employment, mainly in the *Betbans* works.

2. **Growing cash crops:** only one household in the study area, was found growing grapes for sell. No other cases of growing cash crops in substantial quantities were reported. However, fruit trees, mainly *Choerospondias axillaris* are being increasingly planted for cash income. The cereal crops are being still cultivated widely.

a- **Reducing number or type of animal:** A survey at Ghusel on rural transformation from a subsistence to cash economy reported on the increased pressure on ecosystem for increased supply of fodder and firewood (Bhatt et al., 1994). However, such a trend did not exist in the study area. Only one household was reported raising livestock in larger number for cash income. The Brahmins kept cows for subsistence consumption of milk. The rich households, generally keep cows but the poor households mostly the Paharis keep goats. Hence, the caste has a bearing on livestock-type being raised, though statistically not significant, than merely the market signals.

Table 1: Purchase of chemical fertiliser using various sources of income (Pearson's chi-square value in parenthesis)

Sources of off-farm income										
Self-employment			Salary		Wage income		Forestry income			
<NRs 1000	>NRs 1000		<NRs 1000	>NRs 1000	<NRs 100	>NRs 100	< NRs 100	NRs 100-300	>NRs 300	
Annual purchase			% of households							
<NRs 500	23.8	42.9	50.0		16.7	57.1	31.0	21.4	21.4	23.8
>NRs 500	14.3	19.0	16.7		16.6	9.5	2.4	14.3	7.1	12.0
	(0.202)		(2.625) ^a		(0.454) ^b			(0.675)		
Farm source of income										
Cereal crops			Tree crops			Animal husbandry				
<NRs 500	>NRs 500		<NRs 200	>NRs 200			< NRs 100		>NRs 300	
Annual purchase			% of households							
<NRs 500	47.6	19.0	45.2	57.1			57.1		9.5	
>NRs 500	4.8	28.6	19.1	9.5			14.3		19.1	
	(12.218)***		(0.467)					(8.40 ^c)*		

a- Fishers exact test; two tailed significance = 0.165; b. Fisher's exact test; two tailed significance = 0.650; c. Fisher's exact test; two tailed significance = 0.009; significance level * < 0.05 ** < 0.01 *** < 0.001

Table 2: Purchase of chemical fertiliser from total monthly income, wealth class, caste, literacy and land resource perspectives (Pearson's chi-square value within brackets)

	Monthly income (NRs)		Wealth		Caste		Literacy ¹		Land resources			
	<5000	>5000	Rich	Poor	No Pahari	Pahari	<2	>2	Khet yes	no	Bari (ropani)	
											<4	>4
Annual purchase	<i>% of households</i>											
<NRs 500	52.4	14.3	21.4	42.5	19.1	45.2	42.9	23.8	33.3	33.3	52.4	14.3
>NRs 500	11.9	21.4	28.6	4.8	21.4	14.3	4.8	28.5	33.4	0	16.7	16.6
missing				2.4								
	(7.467)**		(10.714)***		(3.385a)		(9.355)**		(10.714b)**		(3.565c)	

a- Fisher's exact test; two tailed significance = 0.084

b- Fisher's exact test; two tailed significance = 0.003 c-

Fisher's exact test; two tailed significance = 0.082 Significance level *<0.05 **<0.01 ***<0.001

4. Cash income to purchase chemical fertilisers: The availability of cash definitely encourages investment in chemical fertilisers. However, cash scarcity alone cannot be a determinant of application of organic manure in fields, which is rather highly influenced by the cultural factors. The cash income from all the sources is not equally spent on purchasing chemical fertilisers (Table 1). The households getting substantial incomes from off-farm sources such as self-employment, wage income and community forest income, do not invest much in chemical fertilisers. The non-farm income from salary may be used but is insignificant on the chi-tests.

Only the households having income mainly from farm sources such as the cereals and animal husbandry, significantly invest in purchasing the chemical fertiliser. However, the households with a substantial farm income from the tree crops do not purchase it much. Therefore, the assumption that under marketing influence, use of chemical fertiliser increases and pressure on forest decreases, may not be true. The use of fertiliser and organic manure in fields may also have another dimension, for that reason Table 2 presents the purchase of chemical fertiliser from wealth, caste and literacy perspectives. The rich and more literate households significantly purchase more fertiliser than the poor and less literate households (The operational definition of literacy is the number of households members having one time access to the formal education). The Pahari households purchase less chemical fertilisers than the rest, though not in a significant extent. The increased income accruing from self-employment, salary and wage, is not significantly related with the increased purchase of chemical fertiliser, rather it is related to the farm income, wealth class and literacy. Furthermore, the households owning Khet (low land crop field) invest significantly more cash in purchasing chemical fertiliser than those who do not own Khet. However, having more Bari is not significantly related with the investment on chemical fertiliser on Fisher's exact test (see Table-2).

5. Abandoning cultivation of crops that demand high labour inputs: The institutionalisation of voluntary exchange of labour such as Parma, Nogar, etc. is still evident in many parts of Nepal. The Parma is similar to a farm of work party or *mwethya* reported from Machakos District of Kenya, by which a person is called in neighbourhood to help with a special project, such as building a hut (Mortimore et al., 1995). These indigenous institutions are as much efficient as the government sponsored co-operatives (Messerschmidt, 1981). Parma and similar arrangement do not incur any direct cash to the employing household. The rich households having substantial cash income are still found abiding by the Parma (see Table-3). Furthermore, if an institution like Parma is manifested in an area lying so close to the urban Kathmandu, the assumption that the farmers are abandoning cultivation of crops that demand high labour input, is rather difficult to accept.

6. Leaving marginal land uncultivated: If population growth is the cause of agricultural change, not the result, and that the principle change is the intensification of land use (Boserup, 1965), then the marketing influence should intensify the cultivation resulting into an intensive land use. This idea is traced back to the work of J. H. Thunen, who argues that the intensity of land use diminished away from a market centre (Hall, 1996). It is noted that farmers in the study area are practising multiple cropping of maize with soya bean. They

have further intensified land use by planting *Chorespondias axillaris* on field boundary.

7. Sending children to school: These days, there is an increasing tendency to send children to schools. However, it is a complex decision process that involves a lot of factors (Foster, 1980; Shrestha, 1984; Kasaju et al., 1985). The economic calculations alone do not bring the children to schools. The increased opportunities of cash income, in fact, has resulted into early drop-outs of some children from schools as reported elsewhere in the literature (Hunt, 1978; Foster, 1980).

It is widely claimed that with increased cash income, firewood will be either purchased As it will no longer be a free commodity or substituted with kerosene (Malla, 1993). However, it is observed that neither the rich households significantly differ from the poor regarding the use of fuel for cooking nor this difference is evident among the Brahmin and Pahari households (see Table-4).

Table -3: The practice of Parma by wealth and caste (Pearson chi-square value within brackets).

Parma	Wealth class		Caste	
	Rich	Poor	Brahmin	Pahari
	% of households			
Yes	31	26.2	14.2	42.9
No	19	23.8	26.3	16.6
	(0.389)		(5.567)*	

Significance level *<0.05 **<0.01 ***<0.001

Table -4: Main source of fuel for cooking by wealth caste (Pearson chi-square value within brackets).

Fuel for cooking	Wealth class		Caste	
	Rich	Poor	Brahmin	Pahari
	% of households			
Firewood	32.5	33.3	21.0	47.4
Kerosene	17.5	16.7	13.2	18.4
	(0.011)		(0.433 ^a)	

a: Validation rule: Fisher's exact test (2-tailed significance =0.714)

Reflections

On one hand the government of Nepal is blamed for ignoring the commercial aspects of community forestry (Malla, 1993) while on the other, social forestry is criticised for omitting the subsistence need of the villagers (Monech et al., 1986). The argument for commercialisation of community forestry stems from an unfounded belief that under strong market influence villagers are interested in cash income and not on subsistence living. The assumption that under socio-economic transformation the pressure on the forest decreases, is in fact, only a rosy depiction. The depiction that 'uncultivated marginal lands, reduction of livestock, stall-feeding' subsequently reduces pressure from common forest (Malla, 1993) may not be true because some of the critical assumptions are unfounded.

This study also justifies Foster's (1980) question regarding the role of economic factors on children's education. Some poor Brahmin households are sending children to school despite the hardship, whereas some Pahari are retaining children in homes so that they can earn income through *Betbans* works. Hence, the decision regarding the schooling of children is not determined by the economic factors alone. The increased earning opportunity through *Betbans* work results into more drop-outs of Pahari children from the school and even a free education opportunity is unable to retain them. This finding firmly agrees with observations elsewhere (Hunt, 1978; Foster, 1980) and is in contrast with Malla's (1993) expectation that an increased cash earning opportunity will place a larger number of children in the school.

It is also fallacious that under stronger market influence, the cultivation pattern shifts from cereal to cash crop. In principle, this study agrees that with increased cash income, people spend much on purchasing chemical fertilisers. However, saying that "a strong market orientation eventually leads to a reduction of pressure on the forest is deceptive. It is assumed that under strong market influence, villagers may face acute labour-scarcity and that may encourage for shifting to cash crop (Malla, 1993). However, it is observed that the Parma is institutionalised to cope with labour scarcity during peak agriculture season or under severe cash-scarcity. The rich and poor households do not differ regarding the use of Parma. Nevertheless, the Pahari households differ significantly from the rest. Hence, the existence of such institutions is culturally determined and the market influence may not be decisive. Such institutions may accommodate the scarcity of labour therefore, the so called 'new strategy' may not exist. Thus 'the rosy depiction' on reducing pressure from the forest (Malla, 1993) is just a mirage.

Conclusion

The so-called new strategy, supposedly adopted by the villagers in the wake of market influence, is, hardly evident. Community forest still plays a significant role in sustaining agriculture in the study area. The socio-economic transformations under increasing influence of market not necessarily minimise the role of community forest as it still contributes substantially in sustaining the subsistence living. Many households still depend on community forest for basic forest products such as firewood, fodder, grasses, and leaf-litters; therefore commercialisation should be only at an amble pace.

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