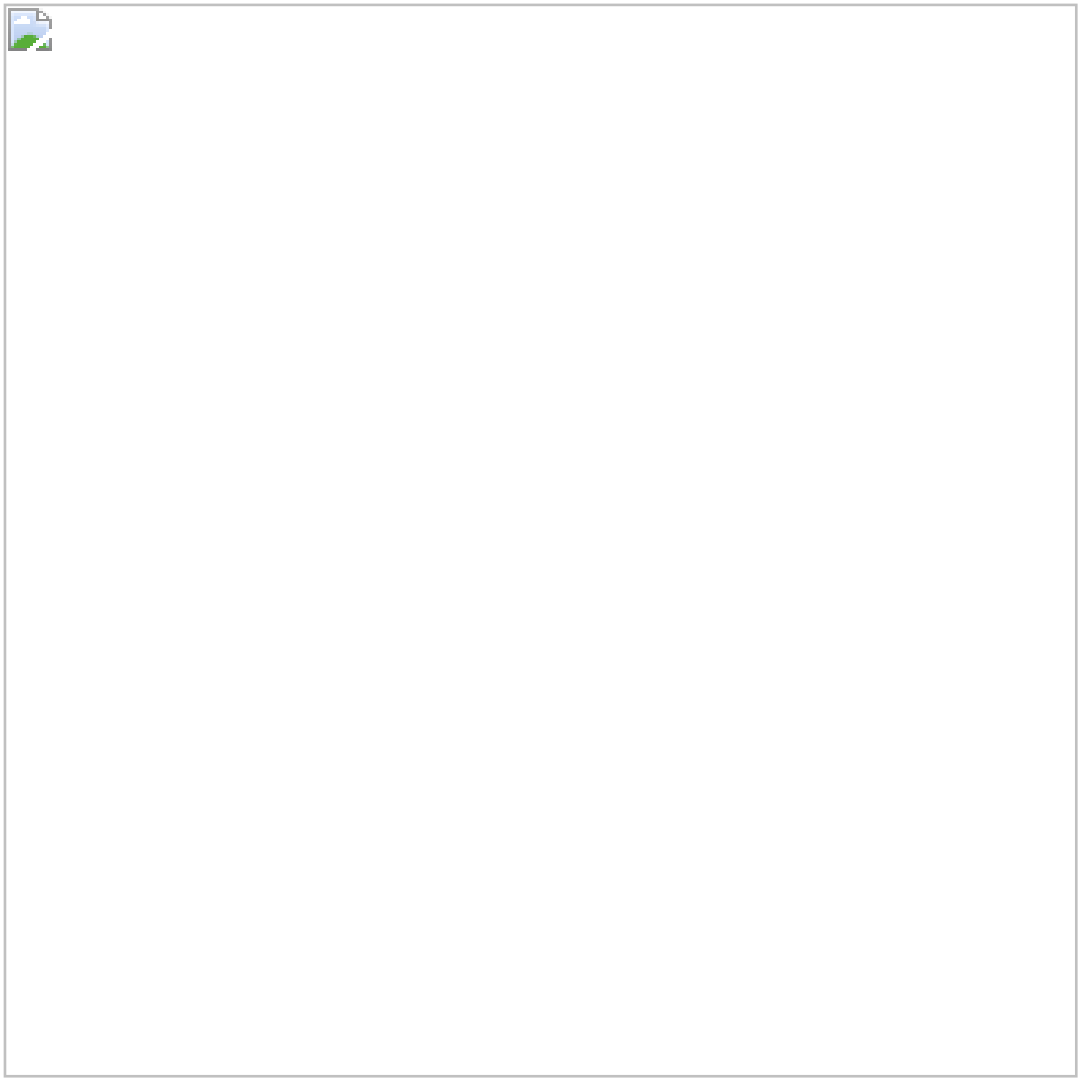

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Pro-Poor Programs Financed Through Nepal's Community Forestry Funds: Does Income Matter?

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Community forest user groups (CFUGs) in Nepal generate income over US$ 10 million annually through community forestry. The income generated is invested in different development activities, including pro-poor programs (PPP). This paper seeks to understand to what extent CFUG funds are being invested in PPP, what factors determine whether investment in PPP is made, and whether the amount of CFUG income matters for making an investment in PPP. The paper relies on primary data from 100 CFUGs distributed in 3 different midhill districts of Nepal. A set of questionnaires was developed and administered to a small group of 100 CFUGs. The study findings show that PPP is the second major expenditure of the CFUG funds examined. It suggests that investment in PPP tends to depend on the amount of CFUG income. In addition to CFUG income, the chairperson's age, the secretary's exposure, and the number of dalit *households are likely to influence whether investment of CFUG funds in PPP is made: an older chairperson increases the likelihood that investment of CFUG funds will be made in PPP, whereas exposure of the secretary to training and a higher number of* dalit *households are likely to lead to less or no investment in PPP. The paper concludes that higher income leads to a proportionally higher investment in PPP and suggests that it is necessary to increase CFUG income to increase investment in PPP. There is also a need to consider that increasing CFUG income may lead to overharvesting of forest resources.*

Keywords: *Community forestry; CFUG funds; pro-poor programs; CFUG expenditures;* dalit *households; forest resources; Nepal.*

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Introduction

Nepal's community forestry is a well-established management form in the country as it is 3 decades old in practice. It is a major program of the government in the forestry sector and is being implemented throughout the country. More than 14,000 community forest user groups (CFUGs) currently manage over 1 million hectares of forestland, involving 1.6 million households (DoF 2008). An important activity of community forestry in Nepal is income generation. CFUGs generate income from various sources such as the sale of forest products, membership fees, and fines from rule violators. The income generated is not shared with the government; instead, it accumulates in the CFUG funds. The annual income of the CFUGs in Nepal is estimated to be more than US$ 10 million, with forest products contributing the major share (Kanel and Niraula 2004). Of the generated income, 25% must be invested in forest development and maintenance activities. The remaining money can be used however the community would like, depending on its needs and the interests of the community (Gautam et al 2004).

Community forestry broadly refers to the transfer of national forests to local communities organized in CFUGs for the protection, management, and utilization of forest resources. The basic institution that implements community forestry is a CFUG. CFUGs are legal entities with autonomy in decision-making; access rules, forest product prices, mechanisms for allocation of forest products, user fees, and other important policies are agreed upon by user members (NORMS 2003 quoted in Kanel and Niraula 2004). The policy of community forestry today is to use community forestry as a tool for poverty reduction. This is considered possible because income generation allows CFUGs to use accumulated funds in development activities. Currently, it is a matter of debate whether investment made by Nepalese CFUGs in development activities truly benefits the poor, as more funds are being invested in rural infrastructure such as schools, roads, and temples and the poor do not directly benefit from such infrastructure. A frequent question asked is, what projects are preferred by poor households, and what projects are attractive for them? Foster and Rosenzweig (2003) conducted a study in India and argued that roads are pro-poor, irrigation investments are pro-rich, and schools are neutral. However, poor households in Nepal may not see schools as a benefit, since they cannot afford to send their children to school. Several studies describe membership in CFUGs and related benefits as favorable to economically advantaged groups (Graner 1999; Malla 2000; Malla et al 2003; Adhikari et al 2004; Pokharel 2008).

Community forestry does have the potential to contribute positively to the improvement of rural livelihoods and poverty alleviation (Fomete and Vermaat

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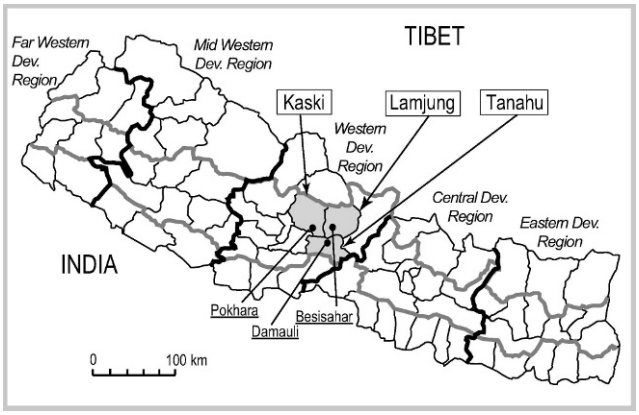
2001; Brown et al 2002; NPC 2002). In recent years, Nepal's government introduced poverty reduction as an important objective of community forestry. The strategy is to achieve poverty reduction through a targeted pro-poor program (PPP) that utilizes CFUG funds. Indeed, some portion of CFUG funds is expected to go toward PPP. The PPP is designed to help the poor to improve their economic condition by supporting activities that generate income. CFUGs therefore initiate PPPs as income-generating activities (Koirala et al 2004). PPPs include activities such as flow of loans, skills-oriented trainings, and scholarships (Kandel and Subedi 2004; Koirala et al 2004; Pokharel 2008). Nepal's Three Year Interim Development Plan has targeted 35% of the CFUG funds to be utilized for pro-poor activities (NPC 2007). In this context, this paper aims to investigate what portion of CFUG funds is being invested in PPP by the CFUGs. It also inquires whether there is a close link between CFUG income and the investment made by the CFUGs in PPP; however, whether investment made by CFUGs in PPP really benefits the poor is beyond the scope of this study. This study focuses on investment made by CFUGs in PPP rather than on who exactly benefits from the funds.

Study area and data collection

The study covers 3 different midhill districts: Lamjung, Tanahu, and Kaski in the Western Development Region of Nepal (Figure 1). These are pioneer districts in the midhills; community forestry was initiated from its very beginning in the early 1980s. By September 2005, there were 3601 CFUGs in the midhills of the Western Development Region, of which more than one quarter (28%) fell in three districts (407, 358, and 255 CFUGs in Kaski, Tanahu, and Lamjung, respectively). The CFUGs in the study areas were classified into 3 categories depending on information about fund size available at the District Forest Offices. The CFUGs with less than NRs 20,000 were not included in this study, as there is a general tendency in rural areas not to start financial activity with a common fund until it reaches the size of NRs 20,000 or more (Pokharel 2008). CFUGs were then categorized into 3 groups based on the fund size: (1) NRs 20,000–NRs 49,999; (2) NRs 50,000–NRs 99,999; and (3) NRs 100,000 and above. On average, 50% of the CFUGs in the study had a fund size of less than NRs 20,000 and 5% had a fund of NRs 100,000 and above. A total of 100 CFUGs was selected from 3 midhill districts (33 from Lamjung and Tanahu, and 34 from Kaski). A total of 11 CFUGs from each category in each district was selected randomly. One additional CFUG from the group of NRs 100,000 and above was selected randomly in Kaski district to fulfill the required number of CFUGs for this study.

Information was gathered from the CFUGs through a structured questionnaire. The chairperson of the executive committee of each CFUG was approached and asked to invite the secretary and treasurer for a small group meeting. The questionnaire was administered in group meetings ranging from 1 to 6 executive members. Before administering the questionnaire the secretary was asked to bring official record books to the group meeting, and the information was recorded accordingly. The mean group size was 1.67, with a standard deviation of 0.865. These data were collected from April to November 2006.

FIGURE 1 Map of the study districts. (Map by author)



Results

CFUGs in three midhill districts in Nepal

The CFUGs in our study districts are quite typical of what is found in this part of Nepal. Communities in this area practice subsistence farming; they mostly depend on paddy, maize, and forests. Forest cover per household is 0.85 hectares in this area, which is slightly higher than the national average (0.73 hectares) (DoF 2008). About 65% of the forests in this area are dominated by sal (*Shorea robusta*), an important and valuable species for timber. The remaining 35% of the forests are typical chilaune–catus (*Schima–Castanopsis*), a less valuable timber species (Table 1).

The average age of the CFUGs in the study areas is 9.56 (± 2.8) years. This suggests that they are relatively experienced in managing forest resources. More than one half of the forest user households belongs to advantaged groups such as Brahmin, Chhetri, and Newar, followed by disadvantaged groups such as Gurung, Tamang, Magar, and *dalit* (Table 1). *Dalit* are members of occupational castes. They are generally disadvantaged in Nepal as compared with other castes such as Brahmin (Kunwar 2003). *Dalit* include groups such as Damai, Kami, and Sarki. In many cases, Brahmin and disadvantaged groups are also poor in rural Nepal. The data do not show whether the forest users from Brahmin and disadvantaged groups are both poor. Therefore, the study chose *dalit* only as poor households, since they generally tend to have a low socioeconomic status.

Community forest user group funds

Income generation is one of the important activities of a CFUG in Nepal. Most CFUGs generate income from

TABLE 1 Basic characteristics of the sampled community forest groups (CFUGs; $n = 100$).

Basic characteristics	Mean[a)]	Percentage of total in category
Age of CFUGs	9.65 (2.80)	
Number of households using the community forests	131.32 (81.98)	
Area of community forests (ha)	83.03 (102.36)	
Forest area per household (ha)	0.85 (1.62)	
Sal-dominant forests		65.00
Schima–Castanopsis-dominant forests		35.00
Households from advantaged group		53.67
Households from disadvantaged group		28.44
Households from *dalit* group		17.89

[a)] Numbers in parentheses indicate standard deviation.

various sources such as sale of forest products, membership fees, and fines collected from rule violators. In order to calculate the income and investment made by CFUGs, explicit information on investments made by CFUGs in different activities in the last 5 years was collected and estimated as income. Annual income is the total investment made by the CFUGs in the last 5 years divided by 5 plus annual savings. Annual savings were calculated as current balance divided by the age of a CFUG. In the study areas, the average annual income of the CFUGs was NRs 63,202, and average savings amounted to NRs 11,629.

CFUG investment in pro-poor programs

The primary issue of interest in this paper is whether CFUGs are investing their funds in PPP and, if so, what portion is invested in this manner. In order to understand CFUG investment, expenditures were broadly classified into 4 categories as suggested by Kanel and Niraula (2004): (1) community development activities such as school buildings, roads, and temples; (2) pro-poor programs such as flow of loans and self-employment skills-oriented trainings; (3) forest development works such as silvicultural operations, awareness campaigns regarding forestry, and the hiring of a forest guardian; and (4) fees for running the CFUG institution such as honoraria, meeting allowances, and money for stationery. Annual expenditures in the study area were estimated as the total expenditure in the last 5 years divided by 5. The average annual expenditure of the CFUGs was NRs 51,574.

The CFUGs invest more than one half of their annual investment in development activities, followed by PPP, forest development, and running the CFUG institution. Table 2 shows the investment activities undertaken by CFUGs under different categories. The major source of expenditure of CFUG funds was in community development activities, suggesting that the CFUGs give highest priority to community development work and invest their funds accordingly. Scholars such as Dongol et al (2002), Acharya (2003), Kanel and Niraula (2004), and Pokharel (2008) also observed that community development activities constituted the major source of expenditure of CFUG funds. The second major source of expenditure of CFUG funds in the study area was PPP. The data indicate that CFUGs' expenditure in PPP went to flow of loans, self-employment skills-oriented training, scholarships, and financial support to the poor to buy medicine and renovate houses. Generally, CFUGs used different criteria such as food sufficiency from own farmland and regular income to identify poor households. In the study area, they defined a poor person as an individual who owns land that is good enough to feed the family only for 6 months or less and who works as a wage laborer or borrows money to feed the family for the remaining months. In the study area, 38% of the population was found to be poor (Pokharel 2008).

About two-thirds of the CFUGs in the study area had undertaken PPP along with various development activities, whereas the remaining CFUGs (39%) had not undertaken PPP. In the study area, about one quarter (22%) of CFUG investment went to PPP, with flow of loans being the major activity undertaken.

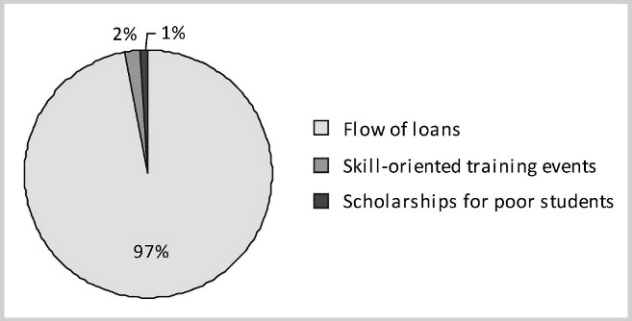
Among the pro-poor activities, flow of loans was very common: the CFUGs used pro-poor investment overwhelmingly to give out loans (Figure 2). Only 2% of pro-poor investment was used for self-employment skills-oriented training, and 1% was used for scholarships. The CFUGs had also offered financial support to poor people

TABLE 2 Annual CFUG investment in different activities.

Serial number	CFUG investment	Activities	Average amount invested	
			Amount (NRs)	Percentage
1	**Community development projects**	Schools	5162	10.00
		Roads	4976	9.64
		Temples	969	1.87
		Water reservoirs/irrigation	1530	2.96
		Offices/community buildings	6823	13.23
		Electricity/mills	2923	5.66
		Grants for schools	1608	3.11
		Support for teachers' salaries	4151	8.05
Subtotal			**28,142**	**55**
2	**Pro-poor activities**	Flow of loans	11,268	21.84
		Skills-oriented training events	180	0.35
		Scholarships for poor students	156	0.30
Subtotal			**11,604**	**22**
3	**Forest development activities**	Silvicultural operations	1638	3.17
		Nursery development	1160	2.24
		Awareness campaigns	564	1.09
		Forest guardians	5457	10.58
Subtotal			**8819**	**17**
4	**Running the CFUG institution**	Honoraria/per diems	93	0.18
		Meeting allowances	736	1.42
		Travel allowances	735	1.42
		Stationary	1445	2.80
Subtotal			**3009**	**6**
Total annual investment			**51,574**	**100**

to buy medicines and to renovate houses in the last 5 years, but this amount was very small. CFUGs' loan terms varied from 3 months to 1 year and interest rates varied from 1% to 2% per month, which was higher than the bank rate (10% and above per year) and lower than the local money lenders (2–3% per month). The interest rate offered by the CFUGs in the area was similar to other schemes of microcredit through self-help group funds (Acharya et al 2007). Although the interest rate was higher than the bank rate, local people preferred to take loans from the CFUG because it was simpler in terms of official procedures (eg no collateral was required) and traveling distance. In the study area, an individual needs to travel about 2 hours to reach the nearest bank for credit, which means the person belongs to the 21% of the country's population who walk 1–2 hours to reach the bank (NLSS 2004). There was also a decreasing trend among the households to borrow money from the bank and/or local money lenders. For example, from 1995–1996 to 2003–2004 the percentage of money borrowed from the bank and local money lenders at the national level decreased from 16% to 15% and from 40% to 26%, respectively

FIGURE 2 Percentage of annual investment in different pro-poor activities.



(NLSS 2004). Easy access to credit from local institutions such as CFUGs could be one of the reasons for this decreasing trend.

Factors influencing CFUG investment in pro-poor programs

Variables such as the amount of CFUG income, the age of the chairperson, the number of *dalit* households among the forest users, and exposure of the secretary to training were considered to be factors influencing the decision to invest CFUG funds in PPP; they were therefore hypothesized as being associated with investing CFUG funds. The amount of CFUG income was hypothesized to have an influence on investing in PPP because the CFUGs with higher income tend to get advice from forest officials for making investments of CFUG funds. Forest officials tend to pay attention to the CFUGs that have more income; they make their visits accordingly, as they think the CFUGs may misuse the funds. The age of the chairperson is hypothesized to have an influence on investing in PPP because older people in rural areas are often given greater respect and are asked to serve as customary judges. Older people carry social values, tradition, culture, and experience and are assets of the nation (Aryal 2008). An exposure of the secretary to training and the number of *dalit* households were also hypothesized to influence investments in PPP. Indeed, the secretary is considered an influential position in the executive committee for making the investment decision. Moreover, secretaries are younger and better educated than are the chairpersons. The chairperson and secretary are active in the management process, particularly with regard to making decisions related to financial matters (Banjade et al 2008). As for the number of *dalit* households, this factor was considered to influence investment in PPP because the *dalit* tend to have low socioeconomic status and are considered poorer than the remaining forest users, and therefore a target of PPP.

Regression analysis

In order to understand the factors of influence for investment of CFUG funds in PPP, multiple regression analysis was used. The model used to estimate making the investment of CFUG funds in PPP was as follows:

$$Y_i = \alpha + \beta_1 \times 1 + \beta_2 \times 2 + \beta_3 \times 3 + \beta_4 \times 4 + \text{error},$$

where Y_i is the value of dependent variables, the investment of CFUG funds in PPP; α is the constant, and βs are the coefficients of the explanatory variables 1 to 4: CFUG income, chairperson's age, secretary's exposure, and number of *dalit* households (Table 3). The results of the multiple regression analysis are presented in Table 4.

The results of the analysis show that the adjusted R^2 value is 0.83, suggesting that 83% of variance in the dependent variable is accounted for by the explanatory variables. The goodness of fit of the model is high, as it is significant at the 0.000 level. Among the explanatory variables, the secretary's exposure and the number of *dalit* households are negatively and significantly correlated with the investment of CFUG funds in PPP, implying that a higher exposure of the secretary to training and a higher number of *dalit* households using community forests reduce the likelihood of making an investment of CFUG funds in PPP. CFUG income and the chairperson's age are significantly correlated with the investment of CFUG funds in PPP, implying that a higher CFUG income and higher age of the chairperson are likely to increase the chances of making an investment of CFUG funds in PPP. The age of the chairperson and the number of *dalit*

TABLE 3 Definition of explanatory variables.

Variables	Explanation
CFUG income	Amount of revenue generated by CFUG in a year
Age of chairperson	Number of years of chairperson since birth
Secretary's exposure	Number of training or study tours attended by secretary in a year
Dalit households	Number of *dalit* households using community forests

TABLE 4 Variables that determine whether investment of CFUG funds is made in pro-poor programs.

Variables	Coefficient[a)]	*P* value
Constant	−8807.95 (6638.34)	0.18
CFUG income	0.910 (0.01)	0.00
Age of chairperson	0.070 (124.83)	0.10
Exposure of secretary	−0.084 (679.62)	0.04
Dalit households	−0.072 (47.64)	0.09
F value = 118.89; $P < 0.000$		
$R^2 = 0.83$		
Adjusted $R^2 = 0.82$		

[a)] Numbers in parentheses indicate standard error (SD).

households are not significant at the 5% level but are significant at the 10% level.

Discussion

The second major expenditure of CFUG funds in the study area was found to be PPP, which is a surprising finding. One recent study shows that only 3% of CFUGs' expenditures are directed to PPP (Kanel and Niraula 2004). The present findings suggest that there was a big leap in investment made by CFUGs in PPP. The reason could be that the concept of PPP in community forestry emerged once community forestry developed a vision of poverty reduction in 1998. Some forestry projects initiated PPPs in 1999–2000, but this number increased only gradually. This could be one reason for the big leap in CFUG expenditure in PPP observed here. The significant increment in investment of CFUG funds in PPP indicates that the CFUGs are considering pro-poor programs as one major activity.

The analysis suggests that CFUG income is highly correlated with PPP investment. The data show that the CFUGs with higher income are more likely to make an investment in PPP. One reason could be that they receive suggestions and technical support from outsiders such as forest officials. Forest officials are often in contact with CFUG officials who have higher income, as there are chances that large funds may be misused. Forest officials interact with CFUGs regularly and make suggestions regarding investments in PPP. Since the Department of Forests initiated PPPs, it presents PPP investment as mandatory and encourages the CFUGs to invest a major part of their income in PPP. The other reason could be that many CFUGs in the study area feel that their income is government money and if they do not follow the officials' suggestions, the money will be taken back.

The age of the chairperson is also correlated with investment of CFUG funds in PPP, in the sense that an older chairperson is more likely to suggest investing CFUG funds in PPP. Indeed, there is a culture of respecting elderly people in rural areas, and they often serve as customary judges to resolve village conflicts. Another tradition in rural areas is to offer the post of chairperson in the executive committee to relatively old persons. Since elderly people carry experience, knowledge, culture, and social values, they consider all these aspects while making a decision, and the decision they make is considered to be unbiased. As elderly people, they try to maintain their reputation; moreover, as village representatives, they may see the problems of the poor as a community concern, not just the concern of an individual. Once they see the problems of the poor as a community concern, they consider PPP as a priority and accordingly suggest investing CFUG funds. There are 9 cases in the study areas where CFUGs have made more than 50% annual investment in PPP. When analyzed, the age of the chairperson in these CFUGs was 50 years old and above.

By contrast, the data indicate that when a secretary's exposure to training is greater, there is less investment of CFUG funds in PPP. The post of secretary in the committee is considered an important one, as it influences CFUG decisions. The District Forest Offices of the DoF often organize trainings on themes such as silvicultural operations and lead study tours in the areas where infrastructural activities are being conducted by the CFUGs and where forests are effectively managed. Generally, organizers tend to invite either the chairperson or the secretary for the training and study tours. The executive committee encourages the secretaries to participate in such tours as they are younger and better educated. In the study areas, the average age of a chairperson is 52 years, while that of a secretary is 42. Similarly, the average number of school years attended by chairpersons is 7 years, while for secretaries it is 10 years. Once the secretary gets exposure to training, he or she is likely to propose trying new activities with CFUG funds; the proposed idea is likely to be accepted by the committee

because the secretary is a respected person. Getting funds for a new activity in the field of rural infrastructural development and effective forest management means reducing the chances of investing CFUG funds in other activities such as PPP. Recently, the DoF has initiated training and study tours focusing on the enhancement of pro-poor activities to implement PPP effectively. Secretaries' exposure to such training is likely to have a positive influence on investments in PPP.

The data also indicate that the higher the number of *dalit* households using community forests, the more unlikely it is that CFUGs will invest in PPP. This is a surprising finding that can be explained in the following manner. An effective implementation of PPP requires collective action, and increasing group size is likely to decrease the perspective for successful collective action. Olson (1965) and many scholars argue that larger community size is less likely to lead to collective action. Flow of loans is a major activity undertaken by CFUGs in PPP. Generally, CFUGs allocate a part of CFUG funds for loans and distribute them accordingly. As the poorer *dalit* expect loans, for example, and fulfilling the needs of a larger number of *dalit* households at the same time is not possible due to the limited funds, the discrepancy in loan distribution makes the poor dissatisfied, leading the program to ineffectiveness. Another explanation is that poor households may invest loaned money in other activities such as consumable goods rather in than income generation, as they face hand-to-mouth issues. Such investment puts poor people in the difficult position of having to pay back loans in time. As a result, they have limited access to loans, diverting investment into other activities. The poor sections of the CFUGs thus have limited access to the group's income (Bhattarai and Dhungana 2005).

Conclusions

Community forestry has received considerable attention in recent years as a potential tool in achieving the goal of poverty reduction. This study analyzes the investment of CFUG funds in PPP in an empirical setting. The study findings clearly underscore the importance of CFUG income for investing in PPP. Factors contributing to variation of CFUG fund investment in PPP are the volume of CFUG income, the age of the chairperson, the degree of the secretary's exposure to training, and the number of *dalit* households using community forests. The first two factors have a positive influence on PPP investment, whereas the latter two have a negative influence. Based on the analysis, this study argues that higher income tends to lead to a proportionally higher investment in PPP, implying that CFUGs require increasing their income to increase their investment in PPP. However, encouraging the CFUGs to increase their income may lead to overharvesting, as forest products are the main source of income. Overharvesting of forests leads to unsustainable development, as it causes environmental degradation. If the post of chairperson is held by relatively older people, this is likely to increase investment of CFUG funds in PPP. Similarly, increasing the secretary's exposure to pro-poor-directed activities would have a positive effect on investment in PPP.

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