

# Can Equity Lead To Financial Efficiency And Sustainability In The Forest Plantation Establishment?

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## Introduction

A Community Forestry Instruction (CFI) was issued by the Forest Department of Myanmar in 1995 with the aim to promote the community initiative in reforestation and conservation at a local level. Local people formed Forest User Groups (FUGs) and established forest plantations according to the CFI. Based on this, the members of the FUGs may receive forest products for their subsistence economy. Those products are essential for the members because agricultural products can not support fully the livelihood under a long run land degradation process in the Dry Zone of Myanmar. Equity on benefit sharing and strict control on the use rights by local government are major bottlenecks for a successful development of the FUGs.

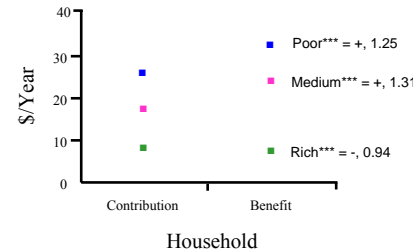
## Objective

In this study, the interaction of users by wealth strata within FUG and its effects on the outcome from the forest plantation is being investigated.

## Methods

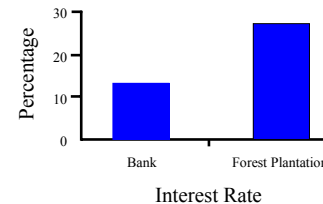
- RRA tools: Key informant interviews, focus group discussions, resource and transect mapping, seasonal calendar and Venn diagrams were applied to gather the information.
- Participatory Wealth Ranking: Criteria are formulated by the communities to define who is poor and who is rich and to conduct the assessment.
- Questionnaire survey: Stratified random sampling techniques were used to select the participants of the survey. Total respondents were 120 households (Poor=42, Medium=39, Rich=39) in 3 villages. A door to door household survey was conducted.
- Tree inventory: A circular sampling unit (0.01 ha) was used with a rectangular grid of 50 by 100 meter. Sampling fraction was 2.5%. DBH classes were divided into 3 categories: Natural regeneration ( $\leq 5.0$  cm), Fuel wood ( $.51 < 14.50$  cm), Poles ( $14.51 > 51.51$  cm).
- Kruskal-Wallis test, Multiple Linear Regression and Financial Analysis were applied for the statistical test and financial assessment.

## Equity in FUG

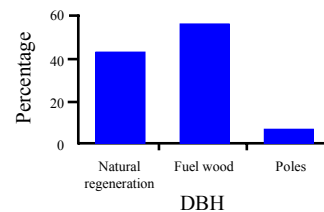


(\*\*\*P < 0.001 represents a significant difference between wealth groups)

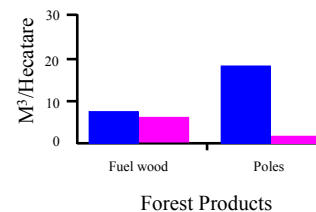
## Financial Efficiency



## Tree composition in relation to the use classes



## Comparison of tree growth and utilization in two use classes



## Results

- Economic equity: The labor and material contributions were different across the wealth groups. Inspections of the mean ranks for the groups suggest that the poor group had the highest contribution and benefit scores, with the rich group reporting the lowest. The equity ratios are,
  - Poor group:  $O_p/I_p = 34.5/27.7 = 1.25$
  - Medium group:  $O_M/I_M = 24.6/18.7 = 1.31$
  - Rich group:  $O_R/I_R = 6.1/6.5 = 0.94$
- Political equity: Attendance and involvement in decision making were not different across the wealth groups, with the discussion status reporting the difference between medium and poor group. Inspections of the mean ranks indicate the medium group had the highest discussion scores, with the poor group reporting the lowest.
- Financial efficiency: NPV= 7,939 \$, B:C=1.87 and IRR=28%
- Sustainability: The trees composition represents the 41% in natural regeneration, 54% in fuel wood and 5% in pole. Growth is greater than utilization for the fuel wood ( $7.15 > 6.20$  m<sup>3</sup>/ha/year) and pole ( $19.22 > 0.36$  m<sup>3</sup>/ha/year).
- Forest outcomes: Inputs, management and use rights contributed significantly to the forest plantations outcomes.

## Conclusions

- Equity enhances active participation of the members and it effects the productivity of forest products and improvement of the quality of the forest.
- The IRR is higher than bank interest rate.
- The natural regeneration status is a satisfactory condition in the community based forest plantations. The growth is higher than utilization for the fuel wood and pole under the systematic management by the forest committee.
- The inputs are the best predictor for the forest plantation outcomes. Management and use rights are the second and third most important predictors for the forest plantation outcomes.

## Acknowledgements

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