



# Is community participation necessary for the success of development programmes? Key lessons from Pakistan

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## Introduction

- Sustainable forest landscape restoration (FLR) is critical to global climate efforts (Mansourian, 2017).
- FLR includes afforestation and reforestation to combat degradation (Erbaugh and Oldekop, 2018).
- Addressing complex challenges is critical to the long-term success of FLR (Löf et al., 2019).
- Involving local communities improves the sustainability of FLR (Ullah et al., 2022a).
- Participation ranges from influence to empowerment (Mensah, 2019).
- Community involvement tailors efforts and provides holistic benefits (Le et al., 2014).
- Successful participation reduces poverty and improves livelihoods (Li et al., 2018).
- The Billion Trees Afforestation Project (BTAP) engages rural communities to restore landscapes (Ullah et al., 2022b).
- This study examines factors that influence community and household level of participation in BTAP activities.

## Methodology

- The study was conducted in the Dir-Kohistan Forest Division, Upper Dir, Pakistan.
- Official project data and surveys conducted from Feb to Sep 2021.
- 300 farm households surveyed.
- Descriptive statistics examined socioeconomic and community characteristics.
- Poisson regression model identified factors influencing community participation.

## Descriptive analysis

- Average age of BTAP participants: 47.06 years, with 4,033 years of formal education.
- Average household size: 12.46 persons.
- 52% reported political conflict, 46% ethnic conflict in their communities.
- 20% reported elite capture as a community problem.
- 24% were aware of BTAP policies and procedures.
- 57% had functioning Village Development Committees (VDCs).
- 58% reported contact with the Forest Department.
- Only 30% reported monthly meetings of village leaders to plan activities.

Table 1. Descriptive statistics of the variables used in the Poisson regression model: Definitions and Summary Statistics

Continuous variables	Description and measurement of variables	Mean (SD)
Age	Age of household head (years)	47.06 (11.82)
Education	Education of household head (years)	4.03 (5.39)
Household size	Family members (number)	12.46 (6.18)
Political conflicts	1 if a farmer's participation has been affected by politically motivated conflicts, 0 otherwise.	0.52 (0.49)
Ethnic conflicts	1 if there are ethnic conflicts in the community, 0 otherwise	0.46 (0.49)
Elite capture	1 if farmer participation has been affected by elite capture in the community, 0 otherwise	0.20 (0.40)
Awareness of the Participation Policy	1 if a farmer is aware of the participation process, 0 otherwise	0.24 (0.43)
Functional VDC	1 if there is a functioning VDC in a farmer's village, 0 otherwise	0.57 (0.49)
Extension contact	1 if a farmer is in frequent contact with the forest department, 0 otherwise	0.58 (0.49)
Monthly meetings	1 if monthly meetings are held during planning of key activities or plantation season, 0 otherwise	0.30 (0.46)

Note: 35% of respondents participated in up to 4 activities, 53% participated in up to 8 activities, and 12% participated in more than 8, up to 11 activities.

## Major activities undertaken by communities under the BTAP

- Household level: 14,714 plants collected, 23,690 fruit plants distributed, 975 hectares rehabilitated, 2,200,000 free plants for farm forestry.
- Community level: 14,226.35 hectares rehabilitated, 265,000 plants in villages, participation of 468 communities.
- Mass reforestation: 497 hectares rehabilitated; unregistered participants; varying levels of participation.

Table 2. Activities and community participation in BTAP and 10 BTAP from 2014 to 2021

Activity	Unit	Total achievements	Level	Number of people participated
Protection of existing enclosures	Ha.	728	Group	18 communities
Establishment of new enclosures	Ha.	10603	Group	262 communities
Fruit plants	No.	10,000	Individual	909 households
Walnut plants	No.	13690	Individual	619 households
Community plantation	No.	265,000	Group	18 communities
Owner's plantation/ Woodlots	Ha.	975	Individual	4909 households
Planting of roads, canals and railway tracts	Ha.	70	Mass	Unlimited (numbers of participants not known)
Farm forestry and agroforestry	No.	2,200,000	Individual	8277 households
Mass afforestation	Ha.	15	Mass	Unlimited (numbers of participants not known)
Sowing/Dibbling	Ha.	834	Group	23 communities
Stream bank stabilization	Ha.	259.19	Group	26 communities
Plantation in moist temperate zones	Ha.	412	Mass	Unlimited (numbers of participants not known)
Bad land stabilization	Ha.	203.54	Group	23 communities
Restoration of marginal lands	Ha.	302.79	Group	51 communities
Plantation of fast-growing trees	Ha.	1295.83	Group	47 communities

Mass afforestation is achieved by mobilizing students, community groups and volunteers through events such as Plant for Pakistan Day and Green Pakistan Day.

## Level of participation and benefits from BTAP

- Communities with high participation received significant benefits: Fuelwood availability (100%), Timber availability (89%), Increased forest cover (83%), Improved environmental services (97%)
- Medium participation communities also saw improvements in forest cover, local wildlife, and ecosystem services.
- Low participation communities experienced fewer benefits compared to medium and high participation communities.

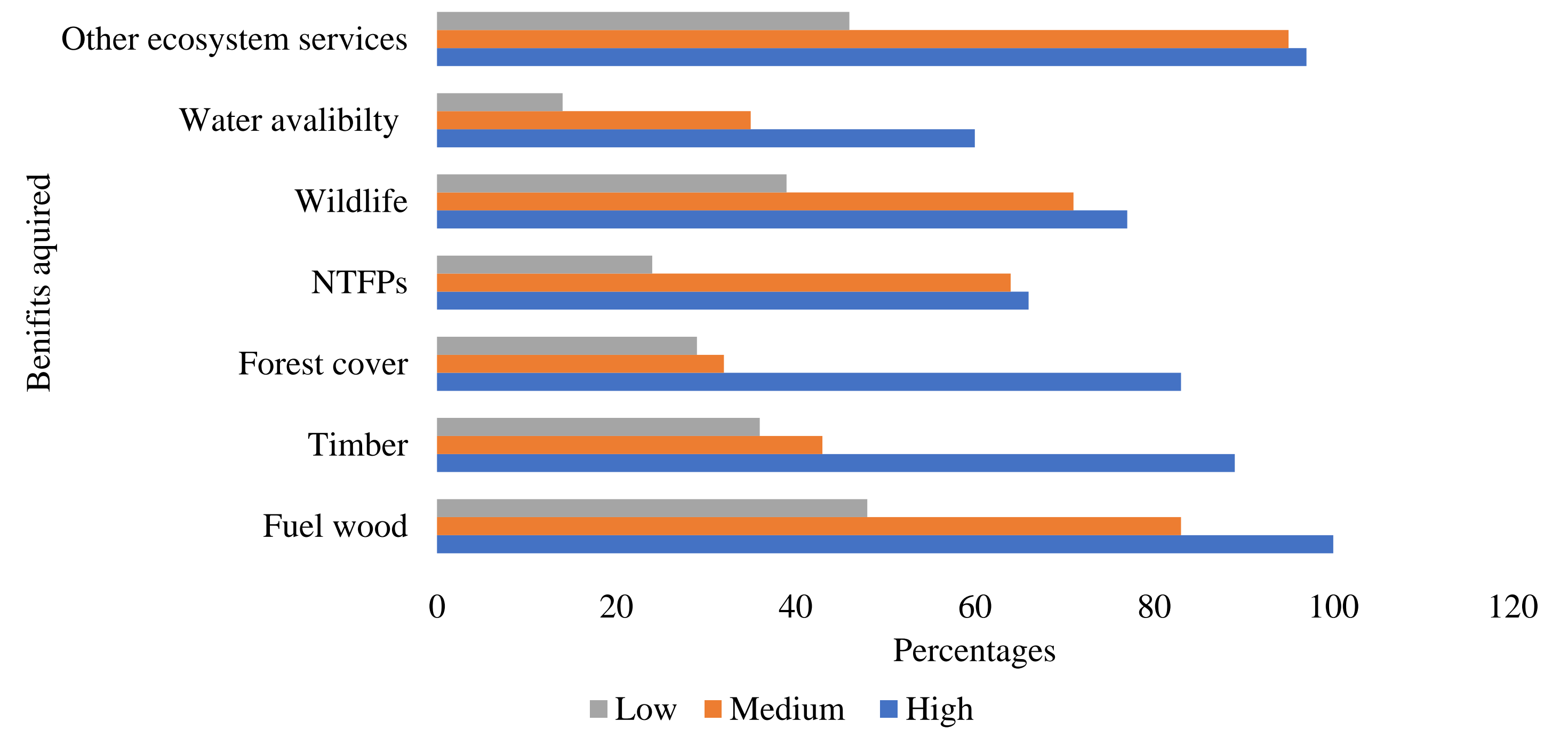


Fig 1. Level of community participation and extent of associated benefits

## Factors determining the level of participation: Community perspective

- Variance Inflation Factors (VIFs) were calculated for the independent variables, with the highest VIF being 3.389, indicating no significant multicollinearity problems.
- The pseudo-R<sup>2</sup> value is 0.074, indicating that approximately 8% of the variation in farmers' BTAP participation is influenced by the independent variables.
- Higher education level of the household head is positively correlated with increased BTAP participation, likely due to better understanding of the project.
- Functioning VDCs at the village level positively correlated with increased participation.

Table 3. Results of the Poisson regression model

Variables	Coef.	St.Err.	p-value
Age	.003	.006	.591
Education	.046	.014	.001
Household size	.002	.011	.824
Functional VDC	.583	.22	.008
Monthly meetings	.004	.152	.98
Extension contact	.048	.156	.757
Ethnic conflicts	.068	.151	.651
Political conflicts	-.34	.235	.147
Elite capture	.229	.21	.274
Awareness of the participation policy	.281	.179	.117
Constant	-1.055	.375	.005
Pseudo r-squared	0.074	Number of obs	300
Chi-square	46.730	Prob > chi2	0.000

## Conclusion and recommendations

- Successful forest landscape restoration depends on strong community engagement (engagement in maximum activities).
- High-level BTAP participants reaped greater benefits than those with lower levels of participation.
- Key factors influencing high-level participation included the education of the household head and the presence of functioning Village Development Committees (VDCs).
- It is advisable to establish and train VDCs or other community-based organizations (CBOs) prior to afforestation projects.
- Developing effective communication networks and attractive land tenure policies in mountain communities can increase participation.
- Organizing knowledge and skills development programs for rural households and forest department officials on afforestation, reforestation and forest management will enhance community participation in BTAP.

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