Policy Research Journal
ISSN (E): 3006-7030 ISSN (P) : 3006-7022 Volume 3, Issue 12, 2025

DIFFICULTIES FACED BY FOLLOWERS WHILE PLANTING TREES AT THE CALL OF SPIRITUAL LEADERS

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DOI: https://doi.org/10.5281/zenodo.18103745

Keywords
Tree plantation barriers, spiritual leadership, faith-based mobilization, community forestry, environmental behavior, Punjab Pakistan

Article History
Received: 29 October 2025
Accepted: 13 December 2025
Published: 27 December 2025

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Abstract

Climate change and environmental degradation necessitate innovative approaches to community mobilization for tree plantation. In Punjab, Pakistan, spiritual leaders possess unique moral authority and social capital that can influence followers' environmental behaviors. However, the practical difficulties faced by followers when responding to spiritual leaders' tree plantation calls remain underexplored. This study investigates the multifaceted difficulties encountered by spiritual leaders' followers in Punjab, Pakistan, when attempting to plant trees in response to their leaders' environmental guidance, with particular emphasis on socio-demographic constraints and resource-related barriers. A cross-sectional survey was conducted with 385 followers of selected spiritual leaders in Punjab, Pakistan, using proportionate sampling. Data were collected through structured interviews comprising demographic characteristics and a five-point Likert scale measuring perceived difficulties across technical, financial, resource, and general problem domains. Descriptive statistics and error bar plots were employed for analysis. The sample comprised predominantly young to middle-aged individuals (mean age 35.9±9.65 years), with 71.7% having primary to matriculation-level education, 46.7% earning below PKR 50,000 monthly, and 51.8% owning less than 5 acres of land. The most severe difficulties identified were lack of finance (mean >4.0), lack of technical advice (mean >4.0) and water scarcity. Technical and financial problems exhibited the highest severity scores but also the greatest variability, while resource problems showed consistent moderate severity across respondents. Despite strong spiritual motivation, followers face multiple intersecting barriers rooted in limited education, modest financial resources, constrained land availability, and inadequate technical support. Faith-based environmental mobilization efforts must extend beyond motivational appeals to provide practical support including technical training adapted to literacy levels, subsidized seedling programs, water management strategies, and micro-financing mechanisms. Aligning spiritual guidance with tangible resource support is essential for translating religious authority into effective environmental outcomes.

1. INTRODUCTION

Climate change and environmental degradation have emerged as defining challenges of the twenty-first century, with deforestation and declining tree cover contributing significantly to global carbon emissions,

biodiversity loss, and ecological instability (Bastin et al., 2019). Tree plantation has been widely recognized as a cost-effective nature-based solution for mitigating climate change, improving air quality, conserving soil, and enhancing ecosystem services (Chazdon & Brancalion, 2019). However, successful tree plantation requires not only technical knowledge and resources but also sustained community engagement and behavioral commitment from individuals across society (Holl & Brancalion, 2020).

Traditional top-down approaches to environmental conservation, primarily driven by government agencies and non-governmental organizations, have often struggled to achieve widespread community participation, particularly in developing countries where trust in formal institutions may be limited (Agrawal & Gibson, 1999). Consequently, scholars and practitioners have increasingly turned their attention to alternative channels of community mobilization, including faith-based leadership and religious institutions (Taylor, 2016; Jenkins et al., 2018). Religious and spiritual leaders possess unique moral authority, social capital, and community trust that can effectively influence followers' environmental attitudes and behaviors (Veldman et al., 2014).

In many Muslim-majority societies, particularly in South Asia, spiritual leaders play a pivotal role in shaping community values, social practices, and collective action (Ewing, 1983). In Pakistan's Punjab province, the relationship between spiritual leaders (*pirs*) and their followers (*murids*) is deeply rooted in centuries-old Sufi traditions, characterized by profound allegiance, regular interaction through shrine visits (*Astana Shareef*), and adherence to spiritual guidance across multiple dimensions of life (Rozehnal, 2007; Werbner, 2003). When spiritual leaders issue calls for environmental action, particularly tree plantation, their followers often demonstrate strong intention to comply due to religious obligation, spiritual devotion, and desire to please their leader (Khalid, 2019).

However, a significant gap exists between intention and actual behavior. While spiritual leaders' environmental appeals may generate enthusiasm and commitment among followers, the practical implementation of tree plantation activities frequently encounters numerous obstacles (Ajzen, 1991). Followers may face challenges related to lack of awareness about proper tree planting techniques, financial constraints in purchasing seedlings, limited access to nurseries, insufficient land availability, water scarcity, technical knowledge deficits, inadequate government support, and maintenance difficulties (Baynes et al., 2015; Shackleton et al., 2016). These barriers can significantly undermine even the most well-intentioned environmental mobilization efforts by spiritual leaders.

Existing literature on faith-based environmental mobilization has predominantly focused on the theological foundations of ecological stewardship in various religious traditions (Jenkins et al., 2018; Gottlieb, 2006), the role of religious leaders in promoting environmental awareness (Mangunjaya & McKay, 2012; Posas, 2007), and the influence of religious beliefs on pro-environmental attitudes (Clugston & Holt, 2012; Taylor, 2016). However, relatively little empirical research has examined the practical difficulties that religious followers encounter when attempting to translate spiritual guidance into concrete environmental actions such as tree plantation. Studies on tree plantation barriers have largely focused on technical, economic, and policy-level constraints without adequately considering the unique context of faith-based mobilization (Holl & Brancalion, 2020; Brancalion et al., 2016).

This gap is particularly significant in Pakistan, where forest cover has declined to approximately 5.01% of total land area, far below the internationally recommended minimum of 25% (GoP, 2021). Punjab province, despite being the country's agricultural heartland and most populous region, has forest coverage below 2%, contributing to severe environmental problems including air pollution, urban heat islands, soil degradation, and reduced agricultural productivity (FAO, 2020). In this context, understanding the specific difficulties faced by followers when responding to spiritual leaders' tree plantation calls becomes critical for designing effective community-based environmental interventions.

The present study addresses this research gap by investigating the multifaceted difficulties encountered by spiritual leaders' followers in Punjab, Pakistan, when attempting to plant trees in response to their leaders' environmental guidance. Unlike previous research that has primarily examined motivational aspects or attitudinal changes, this study focuses

specifically on the practical, behavioral, and contextual barriers that impede successful tree plantation implementation. By documenting these difficulties across various domains—including nursery-related problems, financial constraints, protection and maintenance challenges, technical knowledge deficits, and institutional support gaps—this research aims to provide a comprehensive understanding of why faith-based tree plantation initiatives may fall short of their potential despite strong spiritual motivation.

Furthermore, this study explores how followers' socio-economic characteristics, awareness levels, relationship dynamics with spiritual leaders, and engagement patterns influence their experiences of these difficulties. By examining the challenges through the lived experiences of followers who have attempted tree plantation, this research offers practical insights for spiritual leaders, environmental organizations, policymakers, and community development practitioners seeking to enhance the effectiveness of faith-based environmental mobilization efforts. The findings contribute to broader discussions on community-led climate adaptation strategies, the role of religious institutions in environmental governance, and the integration of traditional social structures with contemporary conservation initiatives in developing countries.

Methods

The present study was conducted in Punjab Pakistan. All followers of selected spiritual leaders (see Ali, 2025) were considered the population of this study. Through proportionate sampling technique, a sample size of 385 respondents was selected. We used interview schedule for data collection. This interview tool was divided into two parts one demographic characteristics and a five-point Likert scale was employed to enable participants to evaluate their responses to each statement, 1; Strongly Agree, 2: Disagree, 3: Medium, 4: Agree, 5: Strongly Agree. After the instrument was well prepared, a thorough examination of its reliability and validity was conducted prior to the commencement of the final data collection phase. Consequently, a formal informed consent document received the necessary approvals from the supervisory committee, the director, and the Dean of the Faculty of Social Sciences at the University of Agriculture Faisalabad. Formal authorization to engage in the study was secured through the process of obtaining informed consent. Participants were guaranteed that their data would remain anonymous and confidential. Participants were guaranteed that the data they provided would solely serve research purposes. A descriptive statistic with error bar plot were carried to find out the findings of the present study.

Results & Discussion

3.1 Age Distribution

Figure 1 presents the age distribution of respondents involved in tree plantation activities following their spiritual leaders' guidance. The majority of respondents (47.8%, n=184) were younger than 35 years, followed by those aged 36-50 years (43.4%, n=167), while only 8.8% (n=34) were above 50 years. The mean age of respondents was 35.9±9.65 years, indicating a predominantly young to middle-aged sample.

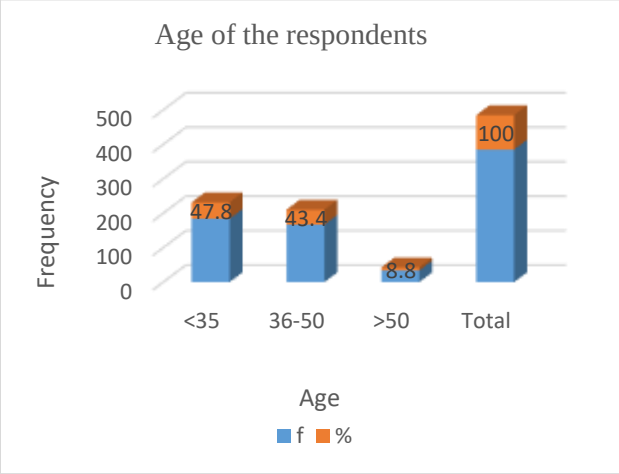

Fig.1 Distribution of the respondents based on their age

This age distribution suggests that younger followers demonstrated greater responsiveness to spiritual leaders' environmental calls, which aligns with previous research indicating that younger generations are more receptive to climate change messaging and environmental action (Corner et al., 2015). The lower participation rate among older followers (>50 years) may reflect physical limitations in engaging in labor-intensive tree plantation activities (Gifford & Nilsson,

2014). The relatively young mean age of participants suggests that spiritual leaders' environmental messaging resonates well with economically active community members who are likely to experience the long-term benefits of tree plantation (Kollmuss & Agyeman, 2002).

Educational Background

The educational profile of respondents (Figure 2) revealed considerable heterogeneity. The largest proportion held primary to middle school education (33.5%, n=129), followed by those with up to primary education (20.1%, n=108) and middle to matriculation level (18.1%, n=70). Notably, 8.1% (n=31) were illiterate, while only 5.7% (n=22) had graduate-level or higher education.

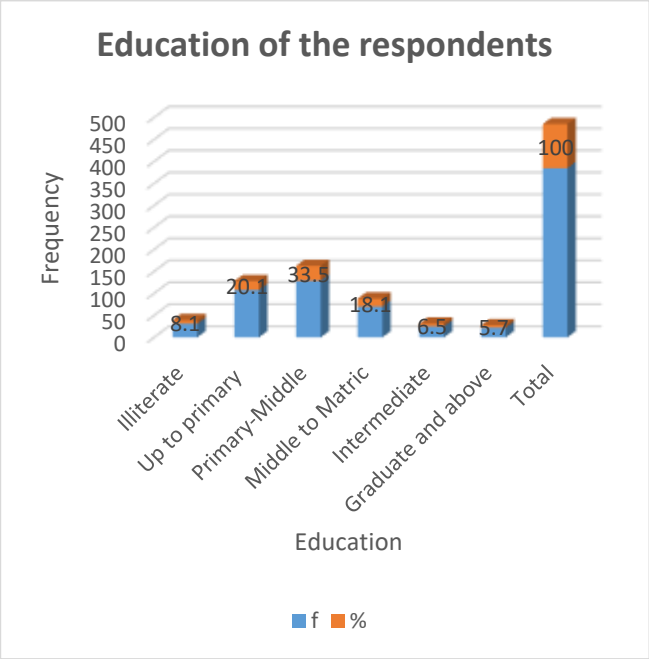

Fig.2 Distribution of the respondents based on their education

This distribution reflects the rural and semi-urban educational landscape of Punjab, where basic literacy is widespread but higher education remains limited. The predominance of respondents with basic to moderate education levels (primary to matriculation comprising 71.7% of the sample) has important implications for understanding difficulties faced during tree plantation. Previous studies have demonstrated that educational attainment significantly influences environmental knowledge, awareness of proper planting techniques, and capacity to access technical information (Zsóka et al., 2013; Ardoin et al., 2020). This finding aligns with research by Bamberg and Möser (2007), who identified knowledge as a critical predictor of pro-environmental behavior.

Economic Status

Monthly income distribution (Figure 3) showed that the largest segment of respondents earned between PKR 30,000-50,000 (29.8%, n=115), closely followed by those earning PKR 50,000-100,000 (28.1%, n=108) and above PKR 100,000 (25.2%, n=97). Only 16.9% (n=65) earned less than PKR 30,000 monthly. This income distribution indicates that the majority of respondents belonged to lower-middle to middle-income brackets, with a substantial minority achieving higher income levels.

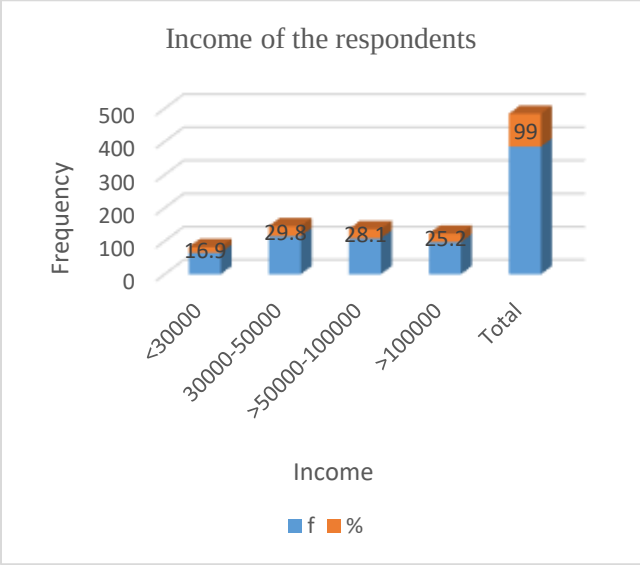

Fig.3 Distribution of the respondents based on their income

The economic profile of respondents is particularly relevant for understanding financial barriers to tree plantation. While spiritual motivation may inspire followers to plant trees, the practical implementation requires financial investment in purchasing seedlings, transportation, tools, fertilizers, and ongoing

maintenance (Baynes et al., 2015). The fact that nearly half of respondents (46.7%) earned less than PKR 50,000 monthly suggests potential financial constraints, particularly in rural Punjab where this income must support entire households and agricultural operations (GoP, 2021). However, the presence of a substantial proportion of middle to higher-income respondents (53.3% earning above PKR 50,000) indicates that economic barriers may not be uniformly distributed across the sample. This finding is consistent with research by Shackleton et al. (2016), who noted that household economic status significantly determines the extent and sustainability of urban greening initiatives. The income heterogeneity also suggests that financial assistance mechanisms or subsidized seedling programs could differentially impact tree plantation success across economic strata.

Land Ownership

Land ownership patterns (Figure 4) revealed that the majority of respondents (51.8%, n=186) owned small landholdings of less than 5 acres, while 10.6% (n=41) were landless. Medium landholders (6-15 acres) comprised 25.7% of the sample, and only 11.9% owned land exceeding 15 acres. This distribution reflects the agrarian structure of Punjab, characterized by smallholder farming dominance (Hussain et al., 2012).

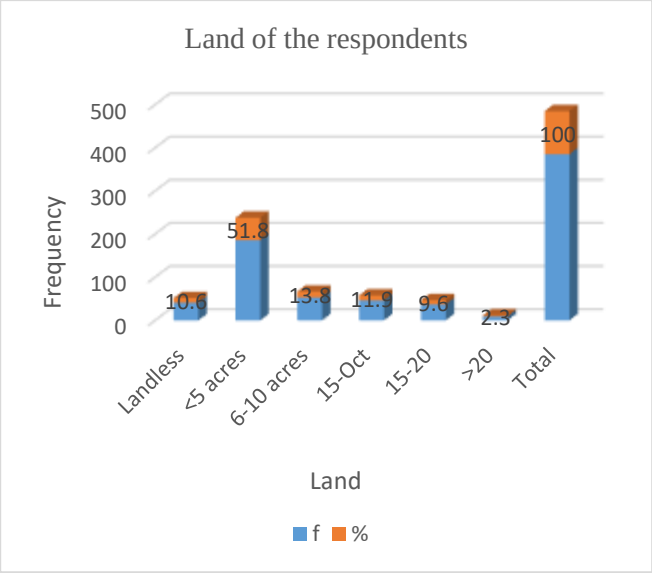

Fig.4 Distribution of the respondents based on their land

Land availability represents a critical physical constraint for tree plantation activities. The predominance of small landholders (less than 5 acres) has important implications for the types and scale of tree plantation that followers can undertake. Smallholders face competing demands for limited land between food crop cultivation, cash crops, and tree plantation (Nair, 1993). In Punjab's intensive agricultural system, dedicating even marginal land to trees may be perceived as economically suboptimal, particularly when short-term food security needs are pressing (Mbow et al., 2014). Predominance of small landholders indicates that tree plantation must compete with immediate livelihood needs, creating tension between spiritual obligation and economic rationality (Forsyth, 2003). The presence of landless respondents (10.6%) further complicates tree plantation efforts, as these individuals must rely on community spaces, roadside planting, or homestead arrangements, which may face different regulatory and maintenance challenges (Kabir & Webb, 2008). Research by Garrity et al. (2010) has shown that larger landholders are more likely to adopt agroforestry innovations due to their capacity to absorb short-term opportunity costs. This finding suggests that spiritual leaders' tree plantation calls may result in highly variable responses depending on followers' land ownership status, with land constraints representing a significant structural barrier independent of spiritual motivation.

Difficulties Encountered During Tree Plantation

Figure 5 shows error bar plot illustrates the mean severity scores and their corresponding standard deviations for various problems faced by individuals (likely farmers or rural stakeholders), categorized into three main groups: Technical/Financial, Resource Problems, and General Problems.

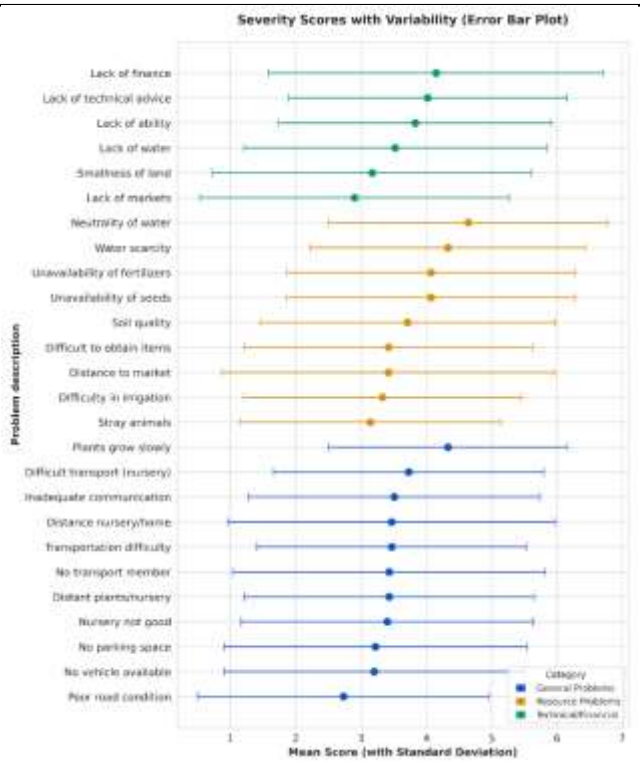

Fig.4 Perception of the respondents regarding difficulties faced while tree planting

The problems with the highest perceived severity are predominantly found within the Technical/Financial and Resource categories: Lack of finance and Lack of technical advice emerged as the most critical issues, with mean scores exceeding 4.0. Neutrality of water and Water scarcity also showed high severity, indicating that water quality and availability are significant bottlenecks. Plants grow slowly (General) is the only "General Problem" to reach a mean score of 4.0 or higher. The horizontal error bars (Standard Deviation) indicate the level of consensus among respondents: Lack of finance and Neutrality of water exhibit very wide error bars (ranging from roughly 1.5 to 6.8), suggesting that while the average severity is high, the actual experience varies drastically across different individuals or locations. In contrast, Stray animals and Soil quality show slightly narrower error bars, indicating a more consistent level of concern across the board.

The data suggests that the primary hurdles are structural rather than logistical. Even though "poor road condition" and "No parking space" are listed, they are rated significantly lower than the Lack of finance. This implies that even if the physical infrastructure were improved, the lack of capital and expertise (technical advice) would still prevent progress. Water-related issues appear twice with high scores: Neutrality of water and Water scarcity. This suggests a dual challenge where users are not only struggling to find enough water but are also concerned about the quality (pH/neutrality) of the water they do have. This is a critical technical barrier that requires specialized intervention. Category Trends Technical/Financial (Green): These issues tend to have the highest means but also high variability. This suggests that financial and technical support is hit-or-miss depending on the region. Resource Problems (Orange): These scores are remarkably consistent, mostly hovering between 3.0 and 4.0. This indicates a moderate, widespread struggle with basic inputs like seeds, fertilizers, and land. General Problems (Blue): These largely center around transportation and logistics. Interestingly, these are rated lower than the other two categories, suggesting that participants prioritize "inputs" (money, seeds, water) over "delivery" (roads, vehicles).

Conclusion

This study examined the socio-demographic characteristics of spiritual leaders' followers in Punjab, Pakistan, who responded to calls for tree plantation. The findings reveal a predominantly young to middle-aged population (mean age 35.9 years) with basic to moderate educational backgrounds, lower-middle to middle-class economic status, and small agricultural landholdings. These demographic characteristics have significant implications for understanding the difficulties faced during tree plantation implementation. The combination of limited formal education (71.7% with primary to matriculation level), modest financial resources (46.7% earning below PKR 50,000 monthly), and constrained land availability (51.8% owning less than 5 acres, with 10.6% landless) suggests that followers face multiple intersecting barriers to successful tree plantation, despite strong spiritual motivation. To effectively address these problems, interventions should prioritize micro-financing and technical extension services, followed closely by water management strategies. While logistical issues like road conditions

exist, they are perceived as less debilitating than the lack of core resources and financial stability. These findings indicate that faith-based environmental mobilization efforts must move beyond motivational appeals to address practical constraints related to technical knowledge, financial capacity, land availability, and resource access. Future interventions should consider differentiated support mechanisms tailored to followers' socio-economic contexts, including technical training programs adapted to literacy levels, subsidized seedling distribution for economically disadvantaged followers, and alternative planting strategies (such as community forestry or roadside plantation) for landless participants. By aligning spiritual guidance with practical support systems, religious institutions can more effectively translate their moral authority into tangible environmental outcomes. The study contributes to broader discussions on community-led climate adaptation strategies in developing countries, demonstrating that understanding the socio-economic contexts of faith-based environmental actors is essential for designing effective interventions that bridge the gap between spiritual intention and behavioral implementation.

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