

## RESEARCH ARTICLE

# Community perceptions and governance of tree planting schemes in Ethiopia: Insights for sustainable ecological and socioeconomic outcomes

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## Abstract

1. Historically, tree planting was primarily implemented to achieve economic functions; more recently, environmental and social goals have also been emphasised. This is due to the realisation that schemes operate in a socioecological system; hence, understanding and fulfilling local social (community) interests are imperative.
2. We conducted 13 focus group discussions and 40 interviews with communities at 13 Ethiopian tree-planting scheme sites to evaluate their perceptions of the landscape challenges, scheme governance processes and to identify areas for improvement. We analysed the survey responses qualitatively and scored the level of community satisfaction with the governance of each scheme.
3. The results indicated that the communities understood and felt the impact of the landscape challenges while being optimistic about tree-planting schemes' potential to avert these issues. However, the communities differed markedly in their satisfaction with the scheme's governance, indicating that the degree to which schemes met their goals was related to the community's satisfactory engagement. Most respondents discussed issues about proper community consultation, engagement, institutionalisation and capacity building, starting from the input phase to the scheme governance process.
4. We concluded that communities' perceptions are valuable at all scheme phases and should be employed to improve a scheme's governance, outputs and impacts. We hope the results will help to encourage local communities' participation in steering and refining the governance of inclusive and appealing tree-planting schemes with sustainable ecological and socioeconomic outcomes.

## KEYWORDS

Africa, communities, implementation, satisfaction, scheme phases

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## 1 | INTRODUCTION

Tree-planting schemes have historically been implemented for economic purposes, such as timber and fuelwood production, while ecological objectives have gained prominence in recent decades (Evans, 2009; Mensah et al., 2017; Raj et al., 2024). More recently, social dimensions have also been recognised, as implementers started to target schemes addressing socioeconomic and ecological goals (Lespez & Dufour, 2021; Rodriguez-Ward, 2018; Swart et al., 2018). This recognition of environmental and socioeconomic goals aligns with global climate change mitigation, biodiversity conservation and sustainable development goals (Stanturf et al., 2019). To achieve these goals, tree-planting schemes need proper governance, community engagement and environmental suitability (Coleman et al., 2021; Galbraith et al., 2021). In low- and middle-income countries, these goals are achieved in complex socioecological landscapes (Haigh, 2016; Martin et al., 2021). This complexity means tree-planting schemes have to deal with issues of land tenure, livelihood improvement, food security, water availability and equity in benefit-sharing (Massa & Mosa, 2021; Obiri et al., 2011). This requires integrating local communities' interests and knowledge, empowering them and improving their economy (Cao, 2008; Stringer et al., 2006). However, this has rarely been integrated into scheme governance, limiting the ability to plan for and implement schemes to achieve these goals strategically (Fischer & Vasseur, 2002; Palmer, 2021; Wortley et al., 2013). As a result, many schemes fail to achieve their targeted objectives, mainly because they lack sufficient integration of complex socioecological issues (Eden & Tunstall, 2006; Hobbs et al., 2016; Yitbarek et al., 2025).

Scholarship on tree-planting schemes has similarly focused on ecological and economic impacts, with relatively few studies on governance processes, especially regarding the integration of local community needs, ideas and interests (Palmer, 2021; Wortley et al., 2013; Yitbarek et al., 2023). However, we contend that community perception is essential to address critical gaps in understanding how their engagement in the governance processes influences the sustainability of scheme outcomes. For instance, a study from South Africa by Forbes et al., (2020) highlights local communities' vital role in determining schemes' success or failure. Similarly, studies from Africa, Asia and Latin America have highlighted the importance of community perception on schemes' governance (Ortega-Álvarez et al., 2022; Seid et al., 2023; Su & Gasparatos, 2023). These studies found that community perception provides insights into how local communities perceive and interact with tree-planting schemes' governance, which is critical for long-term success (Rodriguez-Ward, 2018; Sahle & Saito, 2021). This understanding is particularly timely as global commitments emphasise the need for equitable and sustainable tree-planting efforts (Campos Tisovec-Dufner et al., 2019; Ecker, 2016; Stanturf et al., 2019).

Our study, therefore, seeks to analyse local communities' perceptions of tree-planting schemes in Ethiopia. The study focuses on the governance challenges faced during schemes' input, throughput and output phases (van Tatenhove, 2013). It aims to provide insights into

improving governance processes and fostering more inclusive and effective tree-planting schemes. To achieve these, we engaged with local communities in and around tree-planting schemes in Ethiopia and assessed their perception of the scheme governance processes. We held focus group discussions with community representatives and interviewed local community members. We believe the findings contribute to understanding how community perceptions contribute to improving governance mechanisms and socioeconomic contexts, which shape the success of tree-planting efforts, especially in countries like Ethiopia. This, in turn, can guide policymakers, practitioners and researchers in designing socioeconomically and ecologically sustainable schemes.

## 2 | TREE PLANTING IN ETHIOPIA

The causes of deforestation and land degradation in Ethiopia are complex and diverse but are largely exacerbated by national political, socioeconomic and historical factors (Bishaw, 2001; Wassie, 2020). In averting these challenges, massive reforestation, afforestation, restoration and agroforestry schemes have been variously undertaken from the early 1970s onwards (Lemenih & Kassa, 2014; Takele et al., 2022). These schemes are implemented on either formerly cultivated land managed by local communities or non-cultivated communal land officially controlled by the government with the agreement of local communities (Lemenih & Kassa, 2014; Takele et al., 2022). These schemes were undertaken by government agencies, bilateral and multilateral organisations, international and local non-governmental organisations and local communities (Gebremedhin et al., 2003; Mukai, 2023). They are implemented in areas that extend from 2 to 35,000 ha using mixed indigenous and exotic tree species, shrubs and herbs, the focus depending on local needs and stakeholders' interests (Habtariam et al., 2022; Lemenih & Kassa, 2014; Pistorius et al., 2017; Zeleke & Vidal, 2020). However, most of these schemes have had limited success due to low participation of the local communities, poor technical guidance, land tenure issues and overall poor governance practices (Abera et al., 2020).

Tree-planting schemes typically engage local communities through their representatives. These representatives are usually elected from each social group participating in the scheme by representing their group's, interests, needs and concerns and mediating between the implementing organisation and their social group (Woldearegay et al., 2018). The social groups include the youth, the elderly, women, men, landless, people with disabilities and religious leaders. The social groups are involved in preparing the planting area, implementing tree planting, protecting the planted area and related activities (Abera et al., 2019). However, participation in most cases does not extend to decision-making nor to how to ensure the tree-planting schemes are sustainable and the communities share ongoing benefits from the outputs (Abadi et al., 2016; Chiemela et al., 2018). This is particularly true because participation in most scheme areas is conducted to fulfil

donor and government requirements rather than to genuinely understand and incorporate communities' ideas and perspectives in decision-making processes (Ebabu et al., 2019; Hurni, 1988). The performance of such schemes has been found to be modest, especially in terms of securing legitimacy and achieving high socio-economic and environmental outcomes (Boissière et al., 2021; Le et al., 2012; Yitbarek et al., 2025).

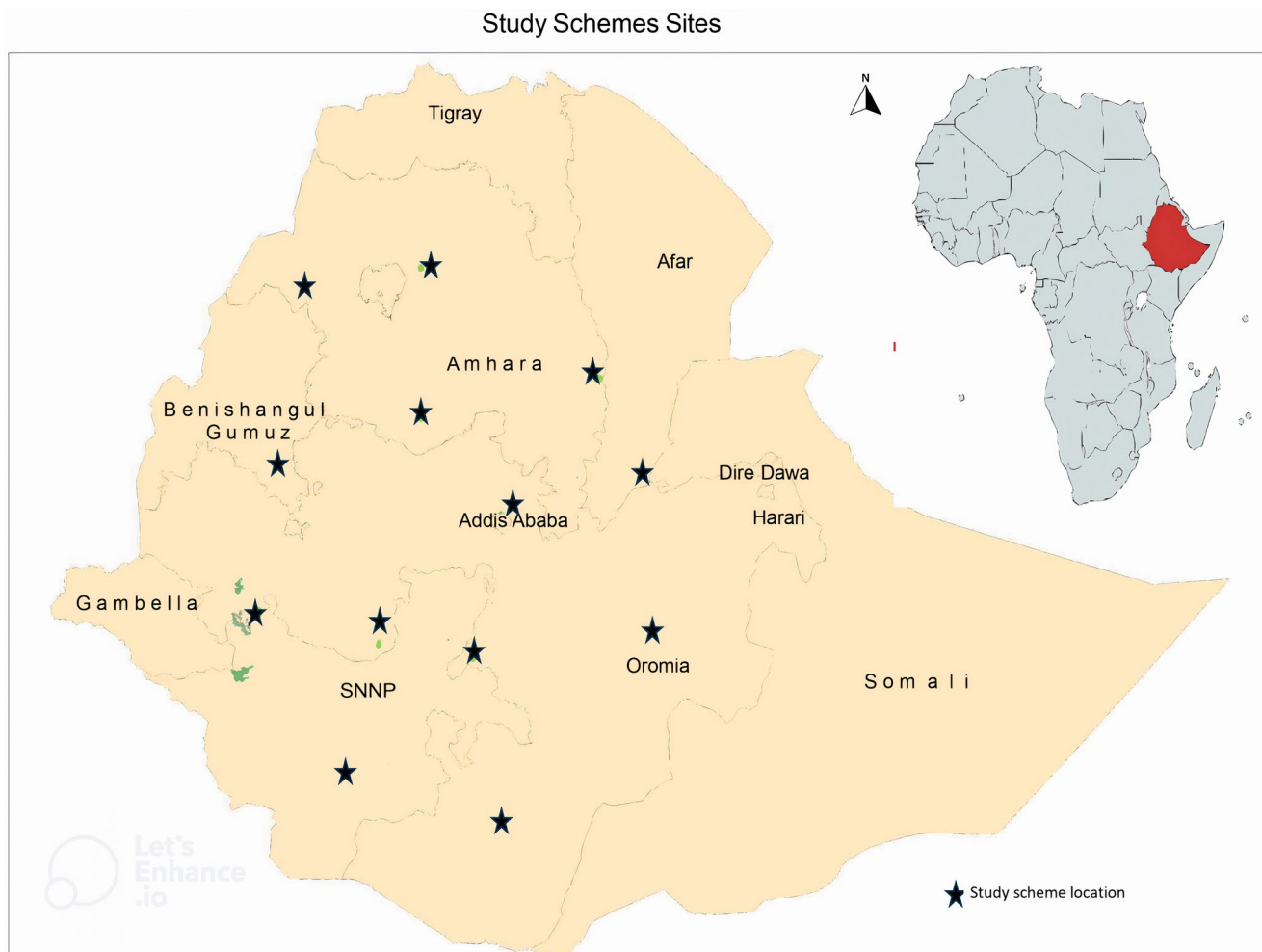
### 3 | METHODS

#### 3.1 | Case study selection and engagement with community representatives

In identifying relevant tree-planting schemes, we noted no consolidated register of schemes in Ethiopia, nor do all schemes appear in the scientific literature. Therefore, we used various methods, to identify schemes. We checked organisational websites, networks and used Google searches to identify (donor and implementer) scheme websites. We also conducted informal consultations to identify suitable schemes by visiting various organisations (including the government

Forestry Commission, United Nations Food and Agriculture Organisation and the Ethiopian Civil Society Coordination Office), networking events and offices of programmes that coordinate and implement tree-planting schemes across Ethiopia. During these visits, we collected data about the schemes and their activities, details about their donors, partners, location of implementation and their overseeing organisations. Schemes were considered if they (1) included a tree-planting activity, (2) implemented in communal areas, and (3) were either ongoing or phased out in the last decade. Schemes were also selected to ensure they were 4) distributed over a broad geographic area. The selection did not consider the clashes with broad distribution and limits of safety, species planted and scale of schemes. We identified 33 schemes, from which we selected 13 (Figure 1), with the remainder (20) excluded as they were in contextually comparable areas to those already selected or in geographic areas with security issues limiting our ability to access the communities. We created a profile for each selected scheme (see Table 1 below; complete detailed data from the Dryad Digital Repository <https://doi.org/10.5061/dryad.2jm63xt10>: Yitbarek et al., 2025).

After selecting the 13 tree-planting schemes, we communicated with the implementing organisations to gain first-hand



**FIGURE 1** The distribution of the tree-planting schemes included in the study throughout Ethiopia.

**TABLE 1** The study schemes and their contexts (see complete detailed data from the Dryad Digital Repository <https://doi.org/10.5061/dryad.2jm63xt10>: Yitbarek et al., 2025).

Scheme	Implementing organisation type	Scheme		Scheme priority	Grant size in USD	# of community households targeted to benefit
		Start	Finish			
1	INGOs and government	2017	2020	Agroforestry based livelihood	2,200,000	5204
2	INGO	2019	2021	Forest management	400,000	2900
3	INGO	2018	2030	Soil and water conservation and restoration	10,000,000	4172
4	INGO	2017	2022	Regreening	240,000	12,000
5	INGO	2017	2022	Regreening	300,000	10,000
6	Bilateral organisation	2020	2023	Restoration and governance	3,000,000	21,000
7	LNGO	2003	2012	Forest Management	2,000,000	4600
8	LNGO	2003	2012	Forest management	2,200,000	5200
9	Consortium	2017	2020	Nature-based Livelihood development	700,000	1090
10	Professional society	2016	2019	Land Rehabilitation	260,000	6110
11	Faith-based organisation	2020	2022	Reforestation	700,000	500
12	Faith-based organisation	2020	2022	Agroforestry and reforestation	460,000	4600
13	Trust	1997	2022	Church forest development	5,000,000	4000

information from the managers and scheme documents about the community and their involvement in the scheme governance. Then, we confirmed that schemes worked with community representatives (from different social strata: women, men, elderly, youths, farmers, livestock herders, landless, local government administrators, religious leaders and 2 to 3 village heads) elected by the community for the scheme governance process. We undertook focus groups with 10–14 representatives per scheme. We selected these representatives, considering they reflect the social group they represent in their thoughts and ideas, which could provide insight into the community's concerns and attitudes. We also selected three households from each community by walking through villages to three local households, one of which is adjacent (within about 100m from the tree-planting site) and two of which are distant (about 400 meters away from the planting site). The household members were selected to supplement the focus group discussions as the focus group discussants are, in most cases, involved with the scheme; it was assumed that the household members would provide a check to see if the focus group discussants represented the community in their responses.

### 3.2 | Scheme context

The selected schemes were implemented in three agroecological zones (warm/humid, cool/subhumid and cool/semi-arid; Table 1). Ten schemes were initiated primarily to fight landscape degradation, and the other three were to conserve the natural forest habitat by integrating sustainable utilisation of non-timber forest products. The implementers were from local to international and governmental to

intergovernmental organisations. The local communities selected to be part of these schemes comprise 500 to 12000 households. The schemes received grants of between USD 0.24 and 10 million from various sources (Table 1).

### 3.3 | Focus group discussions and interviews

Between January and April 2022, we undertook focus group discussions with community representatives. At the beginning of the sessions, which lasted 90–120min, we explained the purpose of the research, and participants agreed and signed an informed consent form along with the confidentiality assurance form while also giving permission to record the process. We facilitated a focus groups by ensuring inclusive and focused discussions and, as observers, capturing group dynamics and contextual insights. During the facilitation, we encouraged diverse perspectives adapted to group dynamics.

After each focus group discussion, we interviewed three randomly selected community members. These interviews lasted 30–45min and used the same guiding questions (Supporting Information S1: Guiding questions list) as the focus groups.

In the focus group and the interview sessions, we stimulated the discussions and supplemented the qualitative responses by initially asking respondents to score their satisfaction with the scheme phases, input, throughput and output phases (van Tatenhove, 2013). To help with the scoring, we presented and explained the five-score Likert scale categories and the associated numeric values (Highly satisfied (5), Satisfied (4), Neutral (3), Dissatisfied (2) and Highly dissatisfied (1)) to respondents, and gathered responses in writing from each participant. In cases where there are outlying responses, their

reasoning was taken as 'quotes' for the qualitative data to identify the diversity of responses.

We used semi-structured guiding questions (Supporting Information S1. Guiding questions list) to initiate, direct and prompt the discussions with the focus group discussants and household interviewees. The guiding questions are selected to understand the communities' overall perception of their surroundings, including the key topics, such as (1) the communities' perception of the land degradation challenges that prompted the tree planting, (2) the importance of tree-planting schemes, (3) the satisfaction with the governance phases (input, throughput and output) and (4) recommendations from the communities for the amendment of current and design of future schemes. The guiding questions and the research method for this study were reviewed and approved by the Ethics Committee of Coventry University under approval number P115392.

### 3.4 | Analysis

We analysed the data qualitatively by transcribing the recorded interviews and focus groups verbatim. Transcripts were initially coded in NVIVO Version 13 (Santo-Tomás Muro et al., 2022) using an inductive process (logical process based on experiences, observations and facts; Sauce & Matzel, 2017) to evaluate and collate findings from each of the focus groups/interviews into themes related to the guiding questions (Fleming et al., 2019; Metcalf et al., 2015). We stratified the responses during the transcription from the different social groups (female, male, elderly, youth, farmers, livestock herders, landless, local government administrator, religious leaders, village heads from 2 to 4 and people with disabilities). An inductive approach (where we collected and observed data to form some patterns and generalisations) was used to examine the coded data in more detail and to organise themes relating to the guiding questions. The analysis involved an iterative process that linked the different perceptions of study participants by reading transcripts and comparing them with relevant literature and their interpretations (Drury et al., 2011). Findings are supported with illustrative quotes, the source of which is identified using the type of data collected like 'focus group' or 'Interviewee', using social group respondents represented like 'elderly' or 'female' and the scheme number where we conducted the focus group or interviews like 'Scheme 1'.

We assumed that the community considered the tree-planting scheme satisfactory if and when it fulfilled the three phases of successful participation during the governance process (van Tatenhove, 2013; Yitbarek et al., 2025). These include the input phase, which is when schemes engage the community during the initiation and planning process; the throughput phase is when schemes improve the quality and transparency of their governance by engaging communities in the decision-making process during the intervention and monitoring and evaluation process; and output phase is when schemes deliver the community sought and relevant outputs, outcomes and impacts (van Tatenhove, 2013; Yitbarek et al., 2025).

Accordingly, in evaluating the community's satisfaction with the study schemes, we averaged the respondents' satisfaction scores for each scheme site and the three scheme phases of input, throughput and output (complete detailed data from the Dryad Digital Repository <https://doi.org/10.5061/dryad.2jm63xt10>: Yitbarek et al., 2025).

## 4 | RESULTS

### 4.1 | Perception of landscape challenges and the need for tree-planting schemes

Interview and focus group respondents felt that their local landscapes faced many socioeconomic and environmental challenges. The challenges mentioned most often were the loss of agricultural and grazing land productivity. The primary forms of these challenges were visible soil erosion and declining agricultural productivity, which they indicated by explaining the formation and expansion of gullies, loss of yield and reduction of crop health, depth and stoniness of the soil and the increasing need for fertilizers. The respondents considered the cause of these challenges to be the conversion of forests and grazing lands to agricultural areas and the growing population.

The land does not expand as we do; our children expect to share our land when they grow up, but its productivity has already declined, so we have to expand into the forest and communal grazing areas to farm.

Elders representative, Scheme 2, Focus group

Moreover, the respondents considered that addressing these challenges was beyond their capacity as the degradation has intensified and huge gulleys have formed, requiring more finance and a skilled workforce for soil and water conservation and tree-planting activities.

...most of us have some capacity for dealing with our private land issues but not the whole watershed, (majority of which is communal) which is the source of most of the degradation issues....the government is trying to help by providing us fertilisers, seedlings and teaching us how to restore, but the degradation is beyond our capacity.

Farmers representative, Scheme 5, Focus group

However, they knew there was a high need for soil and water conservation practices like tree planting to restore the ecosystem, protect the land from degradation and improve the productivity challenges they face. Most of them recognised the tree-planting scheme's purpose and ultimate goals and agreed that these schemes helped them restore degraded ecosystems, thereby improving agricultural productivity.

We do understand that if we can bring back the past vegetation cover in the landscape, we can reduce the erosion from our farmland, but we do not have the capacity or the resources to do this, and that is why this project is helping us.

Local administrator, Scheme 11, Focus group

## 4.2 | Satisfaction with the tree-planting schemes' governance phases

The respondents' satisfaction scores and reasons varied even among focus group discussants. However, we present the average satisfaction scores per phase and in the 13 schemes (Figure 2a,b). There was no consistent pattern in the communities' satisfaction across the different governance phases (input, throughput and output), which on average scored neutral. However, the throughput phase received more satisfactory scores (Figure 2a). As can be seen below, there was a difference between scheme communities' satisfaction, as, for instance, the community deemed scheme 7 to be highly satisfactory

across all phases and Scheme 10 to be highly unsatisfactory across all phases (Figure 2b).

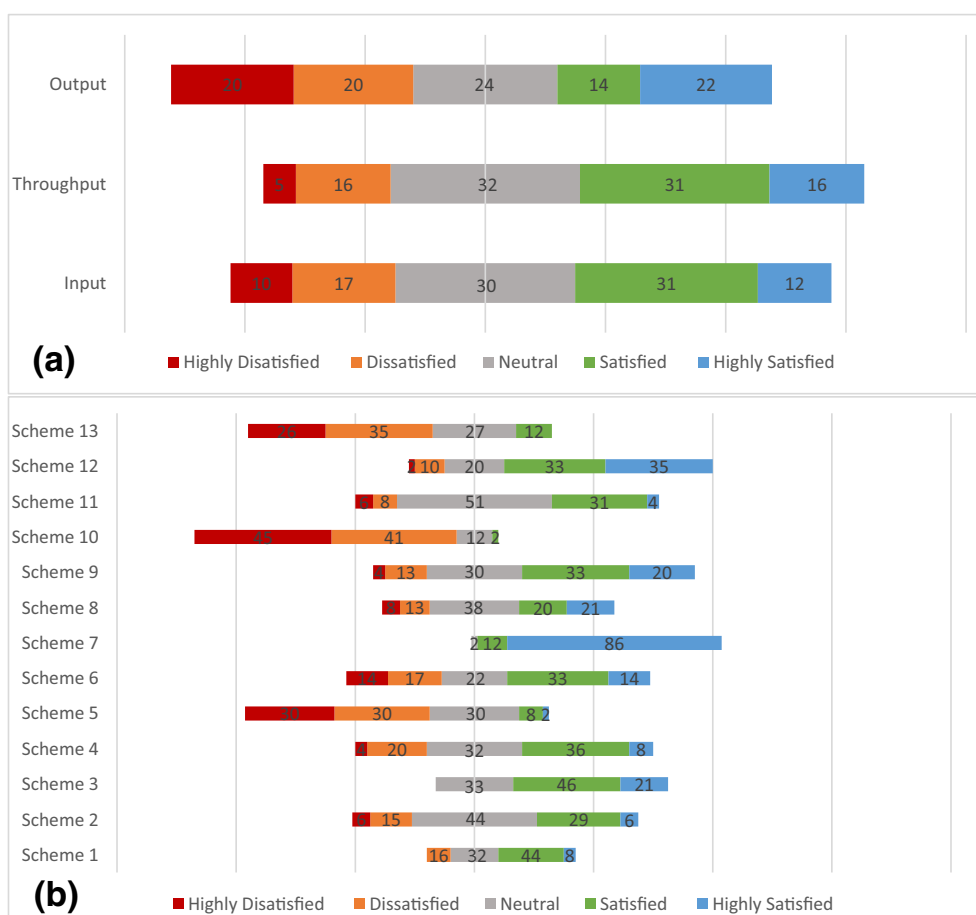
## 4.3 | Perception responses of different social groups

In most scheme areas, social group representatives are neutral regarding their satisfaction with the different scheme phases, except for those of the youth groups and local administrators (Table 2). Most of these social groups indicated satisfaction with the throughput phase.

## 4.4 | Perception of communities on the different scheme phases

### 4.4.1 | Input phase

Except for schemes 7 and 8, the other scheme respondents had no information on how and when the scheme was initiated. However, in



**FIGURE 2** Percentage of community respondents' satisfaction score (a) across different phases (where  $n=204$ ) and (b) in the 13 tree-planting schemes (complete detailed data from the Dryad Digital Repository <https://doi.org/10.5061/dryad.2jm63xt10>; Yitbarek et al., 2025 for the number of respondents per scheme).



**TABLE 2** The average satisfaction scores of the disaggregated social groups (from both the interview and focus groups) for each phase of the Ethiopian tree-planting schemes. Where Highly satisfied (5), Satisfied (4), Neutral (3), Dissatisfied (2) and Highly dissatisfied(1).

	Social groups	Scheme phases		
		Input	Throughput	Output
Focus group discussants	Female	3	4	3
	Male	3	4	3
	Elderly	3	4	3
	Youth	4	4	3
	Farmers	3	4	3
	Livestock herders	3	3	3
	Landless	3	4	3
	Local administrator	4	4	3
	Religious leaders	3	3	3
	Village heads	3	3	3
	People with disabilities	3	3	3

schemes 7 and 8, the implementing organisation sent a study team that consulted with the community and provided information regarding the scheme.

...there were some people who said they came from this organisation and asked us about some issues in the area if there are other schemes here, and what we want to be done here, and then they took some photos and observations in the area.

Male household representative, Scheme 8, Focus group

During their first meeting with the community, many implementers introduced the scheme and asked the community to elect representatives if these were not already in place. The interviewees mentioned that the implementers assumed that these representatives share all the information with the community, although this did not happen in practice. According to some interviewees, even when the scheme implementers invited the whole community during the planning phase, they introduced the scheme plans, activities and targeted outputs without asking for community interest.

I heard about this project through rumours at the beginning, then after a while the scheme implementers sent our village head who invited us for a meeting to elect him and others to represent our interests in the project implementation.

Female household representative, Scheme 11, Interviewee

After the representatives in three scheme sites (3, 7 and 8) were elected, the implementers sought advice on how the scheme should be implemented in the area. Most of the focus group discussants considered the consultation sufficient. Others believed that merely introducing the scheme plan does not constitute proper consultation to determine how and where to implement it.

...the project people came to our village with the district agricultural officer, and they told us about the project, their plans and what they want from us, and how we represent the local community in our work with them, and since then, we have been meeting with them on their terms...

Village head, Scheme 9, Focus group

The respondents believed the scheme process should start with a community consultation about the area's challenges rather than simply developing a list of activities and introducing them to the community.

The scheme implementers considered, it was enough to simply introduce the activities they pre-planned rather than asking our community if that is our interest and if we need anything else done in this project's life...

Female representative, Scheme 1, Focus group

Some focus groups considered that the consultation should have started before the planning period so that there would have been a chance for some change based on local interests. The interviewees also mentioned that all the activities and benefits of the scheme could have been discussed and agreed upon by all community members rather than being made based on consultation with the local government office and representatives.

According to the interviewees, the representatives mostly decided who participated in the planting activities and whose land was used because this involved an incentive from the project implementers. Because of the financial incentive in the form of employment in the scheme activities or livelihood support, there was high disorderly conduct, which led to disagreements between the community representatives and implementers.

...after we had the election, much of the information was shared with the representatives, who usually

shared this informally with those community members close to them and people around the specific planting area; the rest of us heard it if we were close to the representatives or our land was needed for the project activities.

Male household representative, Scheme 5,  
Interviewee

#### 4.4.2 | Throughput phase

In some scheme areas, the focus group participants mentioned that representatives have no decision-making role during the governance process, as implementers usually work with the local government office to select the community members participating in the scheme governance process. They had left out the representatives or treated them as one of the community members and, hence, the representatives had no role.

We were set up as community representatives for the project formality's sake, but the implementers worked directly with the individual community members, ignoring our role.

Farmers representative, Scheme 13, Focus group

In other scheme areas, however, the focus groups mentioned that they had been given a significant role in organising the social groups they represented into beneficiary institutions. Moreover, the scheme activities in these areas were also implemented with the leadership of these representatives along with the established local community institutions.

We have been consulted and involved, at least when it comes to bringing the majority community on board for the activities and when the project needed support in terms of organising beneficiary groups and managing specific nursery development, seed collection, and soil and water conservation activities,

Village head, Scheme 8, Focus group

The individual interviewees said that the scheme's objective during the throughput phase was forgotten because all of the focus goes into the financial incentives from employment, payment for land used, seedlings purchased or livelihood support. As a result, they perceived that the scheme is considered a means for short-term employment or financial benefit rather than a solution to landscape challenges.

I sometimes think, were these projects just a means to get temporary income for a few people? It is like a

lottery to get employed by the project or to take part in the livelihood development schemes.

Female household representative, Scheme 2,  
Interviewee

In some scheme areas, the focus group discussants observed that some scheme implementers started working on community institutionalisation (organising community into legal entities) and empowerment (building community organisational capacity) more than in the earlier phase.

...around the third year, they started talking to us about us forming communal institutions and getting legal support, and they gave us some capacity building training on how to lead our organisation and opened our bank account...

Youth representative, Scheme 4, Focus group

The focus groups in some scheme areas suggested that the scheme could have started with community capacity building, institutionalisation and empowerment activities (Yitbarek, 2015) rather than beginning the throughput phase with biophysical planting activities. Activities could only be implemented after the community was empowered and felt the ownership and confidence to implement and save the landscape.

...I thought, 'Rather than starting with the biophysical activities, why didn't they ask what we wanted or at least build our capacity to engage with them more, rather than considering us like temporary employees or beneficiaries'...

Livestock herders representative, Scheme 11,  
Interviewee

In some scheme areas, the interviewees felt that the period when monitoring and evaluation were conducted was useless because it only involved evaluation studies or visits from donors and government officials, which brought no benefit.

by the end of the project year, the scheme implementers started to bring in many study groups asking us what we gained, the changes we observed, and if we were happy with the scheme...

Male household representative, Scheme 4,  
Interviewee

In one scheme, the implementers conducted a mid-term monitoring and evaluation and used the result to change their remaining scheme governance approach and some targets.

Before this project, I had previously rented out my land to rich farmers and worked for them to feed my



fatherless kids. Halfway into the scheme implementation, they asked us what we wanted, and then they started supporting us with irrigation and land productivity activities. After that, I started buying and renting land from others and employing local youngsters who assisted in my vegetable and fruit farming because of the improved productivity.

Female household representative, Scheme 12,  
Interviewee

#### 4.4.3 | Output phase

The representatives perceived that after the scheme monitoring and evaluation activity, the implementers reduced their presence in the area and removed some of their physical tools and equipment, even though some planned activities were unfinished. In some scheme areas, this phase-out strategy has worsened the degradation.

Finally, the implementers assembled government people from federal and regional levels and donors and announced they handed over the achievements to local government and the community to sustain; just one year later, the area was overgrazed, harvested, and more degraded than before.

Religious leader, Scheme 10, Focus group

Some scheme focus groups felt it was insufficient to say that the scheme activities and outputs were handed over to the local government and community in a meeting without any resources or capacity to sustain the achievements. These focus groups suggested implementers could have used the last year of the scheme to ensure the community's independent functioning in sustaining the achievements and the government taking coordination and control.

Just because they announced at one meeting, 'we have now handed the scheme over to the community and local government,' it does not mean everything was sustained, and the implementers know that, although they never changed this approach...

Landless representative, Scheme 6, Focus group

In a few scheme areas, the interviewees thought they had been enabled to protect their tree-planting achievements because of the community empowerment and capacity-building activities.

Because of our communal institution and linkage with the local court, even after the scheme implementers left, we sued the local government who tried to sell our communal forest to foreign investors, and we won this case.

Male household representative, Scheme 7,  
Interviewee

## 5 | DISCUSSION

### 5.1 | Landscape challenges and the need for tree-planting schemes

Our results indicate that communities understood the socioeconomic and environmental challenges affecting their landscapes, particularly land degradation, soil erosion and declining agricultural productivity, consistent with views reported elsewhere in Ethiopia (Gashaw et al., 2014; Kassa et al., 2013). This understanding provides a foundation for implementing successful community-driven tree-planting schemes, particularly because they cannot address these challenges without external support (Galbraith et al., 2021). Several studies in Ethiopia found that most communities depend on external support to address these challenges rather than consider local options within the community capacity (Gelcich et al., 2005; Tadesse & Teketay, 2017).

### 5.2 | Satisfaction across phases and schemes

The respondents indicated that the scheme implementers must undertake satisfactory community consultation at the input or planning phase, which they appreciated wherever this was done appropriately. Sewenet (2014) also noted that initial consultation and participation are vital for several purposes, such as enhancing community mobilisation, joint decision-making and developing mutual trust with communities. However, this should not be at the cost of compromising the other phases that ensure sustainability. Massa and Mosa (2021) also stated that equity in participation, consultation and engagement must be ensured from the beginning and throughout the governance process.

The respondents generally showed better satisfaction with the scheme's throughput phase than with the other phases, in which they especially mentioned their employment, empowerment process and livelihood development opportunities. According to Trialfhianty and Suadi (2017) this is usually because, at the throughput phase, schemes implement tree-planting activities, livelihood development and soil and water conservation activities, which involve the community through temporary employment and income gain. In some study schemes, the communities were only engaged as employees for biophysical activities like planting without sufficient initial consultation, which they considered to be not sustainable. This diverted community attention towards temporary incomes rather than sustainable socioeconomic and environmental outcomes. Similar results were found by Khatimah et al. (2019) in Citaraja, Sumatra, where the communities overlooked the long-term scheme goals because they were only engaged in the temporary incomes from schemes.

In some of the study schemes, communities were institutionalised and empowered during the throughput phase, which communities highly favoured. However, Yitbarek et al. (2025) suggested conducting institutionalisation during the schemes' input or planning phase to engage the community formally during the throughput

phase. Moreover, Park and Lee (2019) stated that scheme target achievements would be compromised if schemes did not institutionalise or empower communities during the initial phase.

Some of the study communities where the schemes' output phase was used to ensure sustainability by providing the necessary resources and capacity to the local community showed higher satisfaction. Accordingly, several studies indicated that a phase-out strategy that builds community institutional and resource capacity and relies on integrating mechanisms, legislation and finance that go beyond the lifespan of schemes can ensure sustainability (Coleman et al., 2021; Park & Lee, 2019; Sapkota et al., 2018).

It should, however, be noted that just because schemes satisfied beneficiaries or scored high in one phase does not mean the scheme succeeded. For schemes to achieve overall success, the community must lead or inform a scheme's input, throughput and output phases while delivering higher outputs (Fleischman et al., 2022; Löfqvist et al., 2023; Stupak et al., 2021). Such governance will ensure community satisfaction while sustaining scheme achievements (Fragallah et al., 2021; Raufirad et al., 2017).

### 5.3 | Satisfaction of different community social groups

The different community social groups generally did not have differences in their responses, although it was observed that the local administrators and the youth groups had awarded higher satisfaction scores to all the scheme's phases (Chen et al., 2022; Fiore et al., 2020). The administrators' score could be due to their position and opportunity to participate in the scheme (Miles et al., 1998). In comparison, the youth groups' scores could have been associated with their potential employability during the scheme governance process. The interviewees' dissatisfaction indicates the lack of representation by the elected representatives, who hardly shared information or opportunities with their social group (Zhang et al., 2021). Among the interviewees, women interviewees have shown more dissatisfaction than men, indicating the opportunity differences between genders during the scheme governance process. These response differences indicate the power imbalances within communities that undermine the legitimacy of governance processes, requiring careful design of representative structures and accountability mechanisms (Dai et al., 2024). Obiri et al. (2011) noted that perception differences of communities towards schemes influence success by creating tension within communities and with implementers, indicating the need to avoid disparities in information and participation among community members.

### 5.4 | Policy and governance implications

Addressing the communities' dependence on external support for restoring their landscapes requires a shift in tree-planting scheme governance towards more inclusive and participatory models that

prioritise building community capacities and fostering self-reliance (Petriello et al., 2024; Shackleton et al., 2002). These could be implemented by developing governance frameworks that promote equity and inclusivity, addressing power imbalances and ensuring that all social groups are adequately represented in decision-making processes. Tree-planting schemes could incorporate phase-specific plans emphasising community consultation, equitable participation and institutional empowerment at every stage. These can further be strengthened by mandating the application of these frameworks in the planning of schemes and fostering accountability through transparent mechanisms (Löfqvist et al., 2023; Suparwata et al., 2020). Government policies could be used to encourage integrating these frameworks into scheme planning and intervention while ensuring that financial and technical support mechanisms are accessible and sustainable. This means governments can incorporate best practice lessons into national legal instruments by creating legal and economic mechanisms that ensure community engagement and leadership in a participatory governance process, thereby ensuring sustainability (Palmer et al., 2022; Speer, 2012).

## 6 | CONCLUSIONS

Our study demonstrates communities' understanding of the landscape challenges in their areas and the potential socioeconomic and environmental benefits that tree-planting schemes can deliver. Communities' genuine interest in tree planting and their awareness of scheme governance processes emphasises the need for participatory, transparent and inclusive approaches. Such approaches must involve the entire community or, at a minimum, ensure that representatives are accountable and fulfil their roles effectively. In improving such approaches, it is essential to address power imbalances, ensuring equity and proper management of the engagement process, which can help maximise scheme success. The study also presented the community perceptions across all scheme phases, which inform decision-making during the input, throughput and output phases. Integrating these perceptions into the governance process of tree-planting schemes can better deliver sustainable ecological and socioeconomic outcomes. Although the study was conducted in Ethiopia, many findings are generalisable to other low- and middle-income countries (LMICs) with similar socioecological contexts. For instance, issues like land degradation, community dependency on external actors and the tension between short-term incentives and long-term sustainability are challenges reported in schemes across sub-Saharan Africa. Moreover, the importance of community consultation, equitable participation, adaptive governance and sustainability aligns with the goals of global initiatives like the Bonn Challenge and the UN Decade on Ecosystem Restoration. Finally, it is essential to emphasise that decision-makers and practitioners can design and implement sustainable tree-planting schemes if they consistently ensure active community consultation, engagement, institutionalisation and capacity building throughout the scheme governance process.

## AUTHOR CONTRIBUTIONS

Tibebe Weldesemaet Yitbarek conceived the idea and designed the methodology, collected and analysed the qualitative and quantitative data, and wrote the initial draft. Katharina Dehnen-Schmutz conceived the idea and primarily supported methodology development, data collection, qualitative and quantitative analysis and initial draft writing and correction. John R. U. Wilson and Adrian Evans supervised the conceptualization, methodology development and analysis, commented on the original draft and final manuscript preparation. All authors contributed critically to the drafts and gave final approval for this publication.

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## CONFLICT OF INTEREST STATEMENT

The authors declare no competing interests.

## DATA AVAILABILITY STATEMENT

Relevant material associated with this article is archived on the Dryad Digital Repository <https://doi.org/10.5061/dryad.2jm63xt10> (Yitbarek et al., 2025).

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## SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

**Supporting Information S1.** Guiding questions list.

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