



Research

# Unravelling cross-scale and cross-level challenges in Ethiopian forest and landscape restoration governance

Daniel Wiegant<sup>1</sup>, Gete Zeleke Eshetu<sup>2</sup>, Amare Mekonnen Muluken, Pieter van Oel<sup>3</sup> and Art Dewulf<sup>1</sup>

**ABSTRACT.** Ethiopia's federal government has committed to one of the most ambitious forest and landscape restoration targets as part of the Bonn Challenge. To achieve the targets, actors at multiple governance levels aim to influence relevant ecological processes, drawing particular attention to the governance processes that are used to translate national restoration targets into local action. We take a multilevel governance approach and focus on the cross-scale and cross-level challenges that arise in Ethiopia's forest and landscape restoration (FLR) governance context. To this end, we analyze public and non-state actor-led efforts related to participatory forest management and area enclosure in the Kafa Biosphere and Mount Guna landscapes. From 56 semi-structured interviews, 14 focus group discussions, and a policy and project document review, we identified five cross-scale and cross-level challenges: (1) short-term tree planting campaigns and quota mismatch with restoration timelines; (2) planning horizons of restoration-related international development projects mismatch with restoration timelines; (3) federal and international budget allocation for alternative livelihoods mismatches with sustained local restoration processes; (4) federal forest and land policies mismatch with the secure land tenure conditions needed to sustain local restoration efforts; and (5) misalignment of the forest and landscape restoration portfolio exists in the cascading government structure. The need to achieve and sustain national FLR targets requires increased focus on how existing and future restoration-related governance arrangements create fit with the temporal and spatial dimensions of forest and landscape restoration processes, and on how governance arrangements create alignment between governance levels.

**Key Words:** *area enclosure; Ethiopia; participatory forest management; policy; scale challenges*

## INTRODUCTION

Land degradation processes have now become systemic phenomena that push the world toward a sixth mass extinction of species and negatively affect the well-being of at least 3.2 billion people as a result of reduced water supply and quality and increased health and disaster vulnerability (IPBES 2018, IPCC 2019, Pörtner et al. 2021). The recognition that urgent action on land degradation, biodiversity decline, and climate change is needed has translated into great political momentum for ambitious targets to restore degraded and deforested lands (Suding et al. 2015, Mansourian and Parrotta 2018). Significant pledges have been made as part of the Bonn Challenge, which aims to inspire national and sub-national governments to restore 150 million hectares (Mha) by 2020. The New York Declaration on Forests extended the Bonn Challenge target to restore a total of 350 Mha of degraded and deforested landscapes by 2030 (<https://bonnchallenge.org/>). In the wake of these global policy-driven platforms, several government-led regional initiatives have been formed, such as the African Forest Landscape Restoration Initiative (AFR100) to restore 100 Mha of African lands by 2030, and in which over 30 national governments pledged to restore a specific number of hectares at the national level (<https://afr100.org/>).

Restoration pledges made as part of the Bonn Challenge follow the Forest and Landscape Restoration (FLR) approach, which has been defined as a “planned process that aims to regain ecological integrity and enhance human well-being in deforested and degraded landscapes” (Mansourian 2017). The dual objective of improving both ecological integrity and human well-being makes the landscape perspective particularly relevant (Mansourian and Parrotta 2018) to reconcile both forest and non-

forest ecosystems as well as other land uses in a landscape to simultaneously produce food, preserve ecosystem functions, and conserve biodiversity (Chazdon et al. 2017, Temperton et al. 2019).

With numerous restoration targets set by national governments, the governance arrangements used at the national and subnational level to translate high-level commitments into local restoration action require particular attention (Guariguata and Brancalion 2014, Mansourian 2016, Wiegant et al. 2020, 2022a). Still, despite the prominence of restoration in policy frameworks, it remains largely uncharted how FLR strategies and policies are achieved locally (Mansourian and Parrotta 2019, Fagan et al. 2020), whether and how their implementation is influenced by the characteristics of landscape contexts, and what challenges emerge in the process of reconciling the ecological and social objectives of FLR at the local level.

Recognizing the development challenges that landscape degradation poses, Ethiopia's federal government pledged to restore 15 Mha of degraded and deforested land by 2030, as part of the 2014 New York Declaration on Forests (MEFCC 2018a), making Ethiopia among the African countries with the most ambitious restoration targets. These targets are anchored in several federal policy frameworks that place sustainable forest management and restoration at the center of national development (Techel et al. 2021). This includes earlier restoration targets that were set in the 2011 Climate Resilient Green Economy (CRGE) strategy, which is Ethiopia's overarching development framework to reach middle-income country status by 2025 while keeping greenhouse gas emissions low (FDRE 2011). The CRGE strategy has objectives to reduce pressure on forests and

<sup>1</sup>Public Administration & Policy Group, Wageningen University, The Netherlands, <sup>2</sup>Water and Land Resource Centre, Addis Ababa University, Ethiopia, <sup>3</sup>Water Resources Management Group, Wageningen University, The Netherlands

woodlands, afforest and reforest 3 Mha, improve management of 4 Mha of degraded forests and woodlands, and rehabilitate degraded pastures and farmland through area enclosure, and has largely relied on access to bilateral and multilateral climate finance to implement its initiatives (FDRE 2011). Other policy frameworks that have put forest management and restoration central are Ethiopia's REDD+ strategy (FDRE 2018) and the second Growth and Transformation Plan (GTP II; FDRE 2016). GTP I and II have been important milestones toward realizing the CRGE strategy's national development vision. GTP II continued the restoration-related efforts started by the CRGE and posed more specific objectives for the 2016–2020 period, including the aim to increase the forest cover from 15.5% in 2015 to 20% by 2020, and to double the area under enclosure from an initial 10.9 Mha to 22.5 Mha.

Focusing on Ethiopia's FLR governance context, we aim to identify the challenges that emerge when actors at different levels of the governance scale aim to influence relevant restoration processes on the ecological scale. Our central research question is: what are the cross-scale and cross-level challenges encountered in forest and landscape restoration governance in Ethiopia? We answer this question by studying the implementation of participatory forest management and area enclosure, which are the main government-led landscape restoration mechanisms (Kassa et al. 2017). Although participatory forest management is practiced in areas like the moist Afromontane ecosystem where significant but degraded remnant forests are found, area enclosure is mainly practiced in places like the dry Afromontane ecosystem where natural vegetation cover has historically largely disappeared.

#### *Participatory forest management*

Participatory forest management was introduced in Ethiopia during the 1990s by civil society organizations (CSOs) to specifically improve forest management in landscapes that still had significant forest cover. After a decade of experimentation, the mechanism was formally recognized by the government in the 2007 Forest Proclamation, and in 2010 a national upscaling program began. The arrangement moves rights and responsibilities from the government to rural communities living in and around designated forest areas (Cronkleton et al. 2017). Although the government remains the forest's legal owner, it co-manages the forest with rural communities based on a negotiated management plan (MEFCC 2018b). While tree cutting is not allowed for commercial purposes, communities may sustainably harvest and sell non-timber forest products from their forest (Gebrewold 2016).

#### *Area enclosure*

By taking away human and livestock pressure, area enclosure has been practiced to restore the economic and ecological functions of degraded communal lands (Lemenih and Kassa 2014). Surrounding communities are not allowed to let their livestock graze freely in an enclosure (Gebrewold 2016). However, once restored, communities will be able to use the areas as a source of fodder, wood, and other livelihood-related products, based on commonly developed and agreed utilization arrangements. Area enclosures are often combined with soil and water conservation structures, assisted natural regeneration, and tree planting to

improve soil water retention. Without additional measures, revegetation will take place from seeds that are still present in the soil.

We adopted an exploratory multiple case study design to study the multilevel FLR governance context in Ethiopia because it has been little researched, not clearly specified, and characterized by a difficult to access research context and lack of data (Yin 2003, Baxter and Jack 2008, Mills et al. 2012). We explored two government-led landscape restoration mechanisms through a case study approach, and built on the experience and perspectives of members of Ethiopia's FLR community of practice at the federal, regional, zonal, district, and community level. In this way, we created a thick description of FLR governance to understand the different cross-scale and cross-level challenges that emerge when national restoration targets are implemented at the local level.

### **THEORETICAL FRAMEWORK**

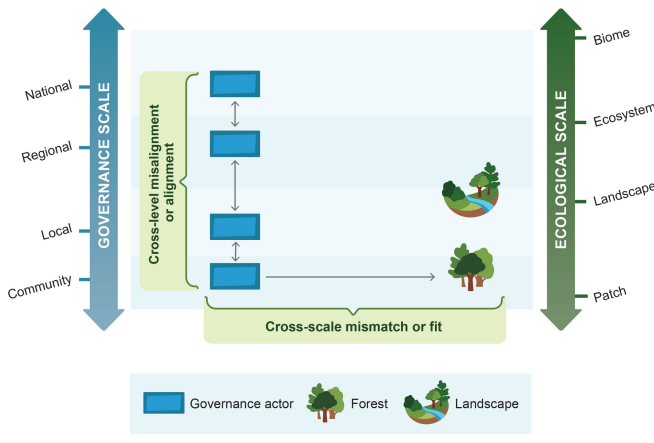
Given that global environmental change processes are increasingly understood to have causes and effects that span across multiple levels, from the local to the global (Cash 2000), there is no single correct level of analysis (Gibson et al. 2000) and a multilevel perspective is rather needed. We used the scale concept as an analytical tool to detect challenges across scales and levels that emerge from FLR governance processes.

#### **Scales and levels**

Scale is a unifying concept that connects social and biophysical phenomena (Cumming et al. 2013). There are two basic definitions of scale. First, scale is a measure for the actual magnitude or extent of social or biophysical phenomena (Padt and Arts 2014). Second, scale is an analytical tool that contains a graduated range of values used to measure and study the environment and the processes governing it (Cash et al. 2006). In the latter definition, scale is a measuring rod that researchers use to organize their understanding of the interactions that take place in the world and to gain knowledge about them (Cash and Moser 2000; Fig. 1). Scales allow comparison of qualitatively different things by abstracting them from a complex and dynamic reality in a standardized way (Padt and Arts 2014). Because scales are largely a social construct, the concept can be used by different scientific disciplines and can be adapted to any specific context and topic to study a wide diversity of interactions between humans and the environment (Cash and Moser 2000, Buizer et al. 2011).

Two of the most distinguished scales to study social and biophysical phenomena are the spatial and temporal scales (Cash et al. 2006, Padt and Arts 2014, Ansell and Torfing 2015). However, these scales are considered insufficient to study multilevel environmental governance, given the existence of other cross-scale and cross-level challenges, in addition to those related to space and time. Cash et al. (2006) added more specificity to the theory by introducing several scales that are central to governance studies, including the jurisdictional, institutional, and management scales (Termeer et al. 2010). Whereas the jurisdictional scale refers to clearly delineated and organized government authorities, the institutional scale refers to relevant rules and regulations, and the management scale focuses on the plans that are elaborated to address a particular issue.

**Fig. 1.** We studied cross-scale and cross-level interactions in Ethiopia's forest and landscape restoration governance context, and the challenges arising from these. An example is given for cross-scale mismatch or fit, and cross-level misalignment or alignment



Following Termeer and Dewulf (2014), we use the governance scale as an analytical tool that brings together jurisdictional, institutional, and management elements to study the restoration efforts of public and non-state actors. We also use the ecological scale to study the ecological processes that public and non-state actors seek to influence through their different restoration-oriented governance arrangements and strategies. Both ecological and governance processes have a spatial and a temporal dimension (Vervoort et al. 2012). The spatial dimension refers to the spatial reach of ecological and governance processes, which can vary from large to medium and small-sized. The temporal dimension refers to the duration of ecological and governance processes and can vary from long term to medium and short term (Termeer and Dewulf 2014).

Many scales contain some form of hierarchical structure and several scale levels can be distinguished (Gibson et al. 2000). Levels are the units of analysis located at different locations along a scale (Cash et al. 2006). This distinction between scales and levels has added precision to the scale literature (Ansell and Torfing 2015). On the ecological scale, the biome, ecosystem, landscape, and patch levels can be distinguished. Ecological systems have a relatively well-defined hierarchical structure of levels of organization (Scholes et al. 2013) and on each of them different ecological processes can be observed. Also in the public sector there is a hierarchy between different levels due to authority, with the power of lower level governments often being limited by higher level governments (Termeer et al. 2010). There also tends to be a clear division of tasks and responsibilities between government levels. Important governance levels in Ethiopia include the federal, regional, zone, *woreda* (district), and *kebele* (ward) levels.

### Cross-scale and cross-level challenges

To meet national restoration targets, actors at different governance levels seek to influence relevant ecological processes. When implementing restoration targets, actors may create or be confronted with challenges that work out across scales, and across

governance levels. Cash et al. (2006) distinguished three types of cross-scale and cross-level challenges:

1. **Blind spot:** the failure to recognize important scale and level interactions. This challenge refers to a lack of understanding of key processes that occur across scales and levels (Vervoort et al. 2012), which may cause a solution that is formulated at one level to result in new problems at other levels or scales (Cash and Moser 2000, Buizer et al. 2011). If a national public actor targets the district level to achieve its policy objectives without regard to the constraints that exist at that particular level, the implementation of the policy may be ineffective or unsustainable (Cash et al. 2006). Blind spots may be the result of an inability to observe or influence the full spectrum of cross-scale and cross-level interactions that are relevant to an issue, given their inherent complexity.
2. **Mismatch:** the persistence of cross-scale mismatch and cross-level misalignment. An archetypical cross-scale challenge is the cross-scale mismatch (Gibson et al. 2000, Cash et al. 2006, Termeer et al. 2010). It occurs when governance processes are not coterminous with the ecological processes they seek to influence, neither in space nor time (Cash and Moser 2000, Cash et al. 2006, Cumming et al. 2006). Spatial mismatch arises when the spatial reach of governance processes does not fit the spatial reach of relevant ecological processes (Ostrom et al. 1961, Termeer and Dewulf 2014). Temporal mismatch occurs when the temporal reach of governance processes does not fit the temporal characteristics of relevant ecological processes. Moreover, cross-level misalignment can arise when relevant governance processes at different level are not aligned, hindering a smooth governance process (Termeer and Dewulf 2014).
3. **Plurality:** the failure to recognize heterogeneity in the way scales and levels are perceived and valued by actors at different levels. There is no single best description for a problem or solution that applies to the whole system or to all actors involved (Cash et al. 2006). Depending on their interests, different actors may highlight different aspects of a problem as the most relevant and focus on different levels at which a problem manifests itself (Folke et al. 2005). Framing an issue as a local, regional, national, or global problem can lead to conflicting perspectives and may drive processes of actor inclusion and exclusion in finding solutions (van Lieshout et al. 2011). Frames can cause certain scale levels to become dominant while others are made less important, placing certain actors who are located at the “right” level at the center of authority to offer the solution (Cash and Moser 2000, Cash et al. 2006).

Although scales and levels may be considered as a reflection of reality, multiple scholars claim that scales and levels are human constructs that are constantly reconstructed in the interface of science, society, and politics (Kurtz 2003, Buizer et al. 2011). The choice of actors to focus on particular scale levels can be strongly linked with political issues (Cash et al. 2006).

## METHODS

### National context

The Ethiopian highlands fall within the Eastern Afrotropical biodiversity hotspot (Mittermeier et al. 2011), which can be

divided into moist and dry parts. In these highlands, however, historic agricultural expansion, overgrazing, fuelwood collection, and more recently large agriculture investments have led to ongoing processes of deforestation, forest degradation, soil erosion, and loss of fertility (Lemenih and Kassa 2014, Hurni et al. 2015, MEFCC 2018b). Virtually all land use changes in the highlands have been unidirectional, from natural forest and grassland landscapes to human-managed farmlands, exotic tree plantations, and human settlements (Providoli et al. 2019). Land conversion has been driven by a reliance of nearly 83% of the population on subsistence farming and livestock, coupled with increasing population pressure. Land degradation is no longer a mere local problem, but threatens food security and impacts water quantity and quality downstream. According to a recent inventory, a total of 82 Mha in Ethiopia was assessed to have potential for tree-based landscape restoration, including 88% of Amhara region and 73% of the Southern Nations Nationalities and People's (SNNP) region (MEFCC 2018a).

The federal government has been pursuing sustainable land management efforts for decades in response to the widespread drought and famine of the 1970s and 1980s, which were believed to be largely caused by land degradation (Lemenih and Kassa 2014, Providoli et al. 2019). Efforts have been concentrated in Ethiopia's highlands where population density is highest and forest and land degradation most severe (Kassa 2018). The Ministry of Agriculture (MoA) and the Environment, Forest and Climate Change Commission (EFCCC) play central roles in state-led restoration initiatives. Following a federal system since 1995 (Gebrewold 2016), Regional States have the power to plan and implement their own development activities within the framework of federal policies and proclamations (MEFCC 2018b). Agencies at the regional state level are responsible for implementing restoration policy targets and manage land and natural resources, while zones, *woredas*, and *kebeles* are all responsible for doing their part in the implementation process. At the *kebele* level, sustainable land management efforts are coordinated by MoA-employed development agents who provide extension services. The agents are mobilizing rural community members, who are expected to provide 25–40 days of free labor in the dry season to carry out public works including soil and water conservation and tree planting (Lemenih and Kassa 2014, MEFCC 2018b).

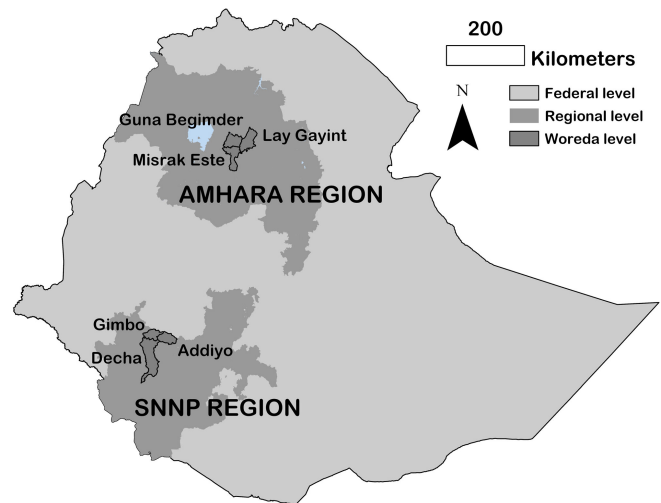
Over the years, the federal government's long-term commitment to sustainable land management has mobilized major investments from multilateral and bilateral development partners (Agostini et al. 2017, Providoli et al. 2019). Initiatives that have supported restoration efforts that are MoA-led have included the World Food Programme-funded MERET project, which later informed the Productive Safety Net Programme (PSNP) and the Sustainable Land Management Programme (SLMP), both of which are funded by the World Bank, Global Environment Facility, and other partners (MEFCC 2018b). Current efforts are the World Bank's Resilient Landscapes and Livelihoods (RLLP) and Climate Action through Landscape Management (CALM) programs that both started in 2019. Large restoration efforts that are EFCCC-led are the Norway-funded REDD Investment Plan and Sweden-funded National Forest Sector Development Programme (NFSDP; MEFCC 2018b). In recent years, more visibility has been given to planting trees. This is illustrated by the campaign to plant 4 billion trees announced in 2019 by Prime

Minister Abiy Ahmed and which was followed by the planting of 5 billion trees in 2020, as part of the government's Green Legacy Campaign to plant a total of 20 billion tree seedlings in four years.

### Landscape case studies

To analyze the cross-scale and cross-level challenges occurring in Ethiopian FLR governance, we base our results on two landscape case studies: the Kafa Biosphere, where the study of Gimbo, Decha, and Addiyo *woredas* provided insight into the implementation of participatory forest management, and the Mount Guna Community Conservation Area where the study of the Lay Gayint, Guna Begimder, and Misrak Estie *woredas* that surround Mount Guna provided insight into the implementation of a large area enclosure (Figs. 2, 3). We identified landscapes in which restoration efforts had been conducted for a number of years and which could provide a rich description of the cross-scale and cross-level interactions that take place as part of FLR governance. Given the lack of documentation of FLR governance processes in the scientific and gray literature, key informants at the national level were important to identify suitable landscapes. Although some were not accessible at the time of fieldwork because of the volatile security situation (e.g., Bale Mountains), others had already received some research attention (e.g., Abreha We Atsbeha in Tigray and Humbo in SNNP region). Mount Guna and Kafa Biosphere reserve were selected because they provided a rich governance context with multiple restoration-oriented actors, which had still not been studied.

**Fig. 2.** Location of the studied districts (*woredas*) in Ethiopia. (source: elaborated by the authors, with geographical data from WLRC).



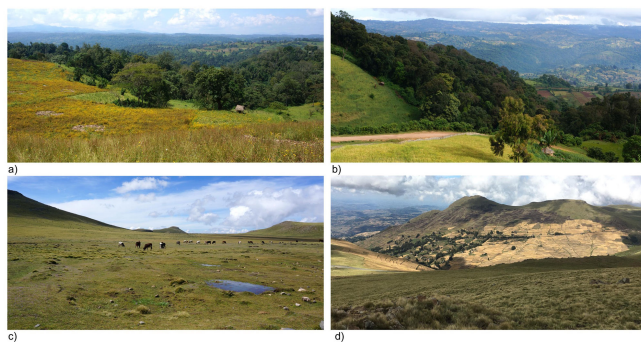
### Kafa Biosphere

The Kafa Biosphere Reserve is located in Kafa Zone of SNNP Regional State. Located between 500 and 3350 meters above sea level, the reserve is home to large areas of Ethiopia's moist evergreen montane forests, bamboo thickets, and wetlands (Bender-Kaphengst 2011) that make it an important freshwater source. The region is considered the origin of *Coffea arabica* and is still home to many wild coffee varieties. Although it was little



affected until the 1970s, large areas of the landscape have been disturbed and fragmented as a result of excessive logging and forest conversion to smallholder farming, pastures, and commercial plantations over the decades (MEFCC 2018b). The creation of a UNESCO Biosphere Reserve in 2010, at the urging of German CSO NABU, has created opportunities to conserve the remaining coffee forests and promote sustainable development in Kafa. Participatory forest management is currently an important mechanism to conserve and restore degraded forests in this southwestern part of the country.

**Fig. 3.** Forest remnants in Kafa's Gimbo (a) and Addiyo (b) *woredas*, and livestock herding and crop cultivation in Mount Guna's Guna Giminder (c) and Misrak Estie (d) *woredas*.



### Mount Guna

The Mount Guna Community Conservation Area is located in the South Gondar Zone of Amhara Regional State. The conservation area, which extends between 3200 and 4113 meters above sea level, contains natural afro-alpine grasslands and tree species that provide important water regulation functions to the Tekeze and Blue Nile basins and the sub-basin of Lake Tana (BoCTPD and ORDA 2012). Overgrazing and agricultural expansion have put Guna's grasslands under increasing pressure in recent decades. The 4615 ha Community Conservation Area was demarcated in 2013 and closed in two separate phases, as part of the International Fund for Agricultural Development (IFAD)-funded Community-Based Integrated Natural Resources Management Project in Lake Tana Watershed (2010–2017; Gebrewold 2016). This project aimed to contribute to the eradication of poverty, and to realize carbon sequestration, biodiversity, and water regulation benefits by improving ecosystem integrity.

### Data collection

We reviewed policy and project documents and conducted interviews and focus group discussions. First, a screening was made of policy documents (FDRE 2011, 2016) as well as project reports that focus on restoration in the Kafa Biosphere landscape (e.g., Bender-Kaphengst 2011) and Mount Guna landscape (e.g., BoCTPD and ORDA 2012). To get an idea of the regulations and strategies used to guide restoration efforts, the documents were reviewed for their reference to restoration in order to understand the landscape context and inform the semi-structured interview checklists.

Second, between October and December 2019, 56 semi-structured interviews, 14 focus group discussions, and field observations were

conducted by an independent research team consisting of a Dutch and Ethiopian national, who have no links with organizations that carry out restoration efforts in Ethiopia and no previous experience in the two case study landscapes. Figure 4 shows all the interviewed actors and their positions in the case study. For the interviews, we used a purposive sampling strategy to identify relevant actors. The decision to interview an individual was based on our judgement of the individual's central role in FLR governance processes at the federal, regional, zone, and *woreda* level, or restoration efforts in the two landscapes. For the focus group discussions, we conducted a focus group discussion with *woreda*-employed environmental and natural resource management experts in each of the six studied *woredas*. Furthermore, we conducted a focus group discussion with members of natural resource user groups in each *woreda*. In Kafa Zone, these were participatory forest management groups, and in the South Gondar Zone these were grassland (Guassa) committees. The groups and their members were identified with the help of a forest management expert in Kafa Zone, and the Mount Guna Community Conservation Area office in South Gondar Zone. There is no overlap between the individuals that were interviewed as part of this research, and those that participated in the focus group discussions. The aim of the focus group discussions was to gain insight into these groups' interactions with higher level restoration actors, such as the government and CSOs, and the challenges they face. No explicit attention was paid to variation in opinions between specific group members.

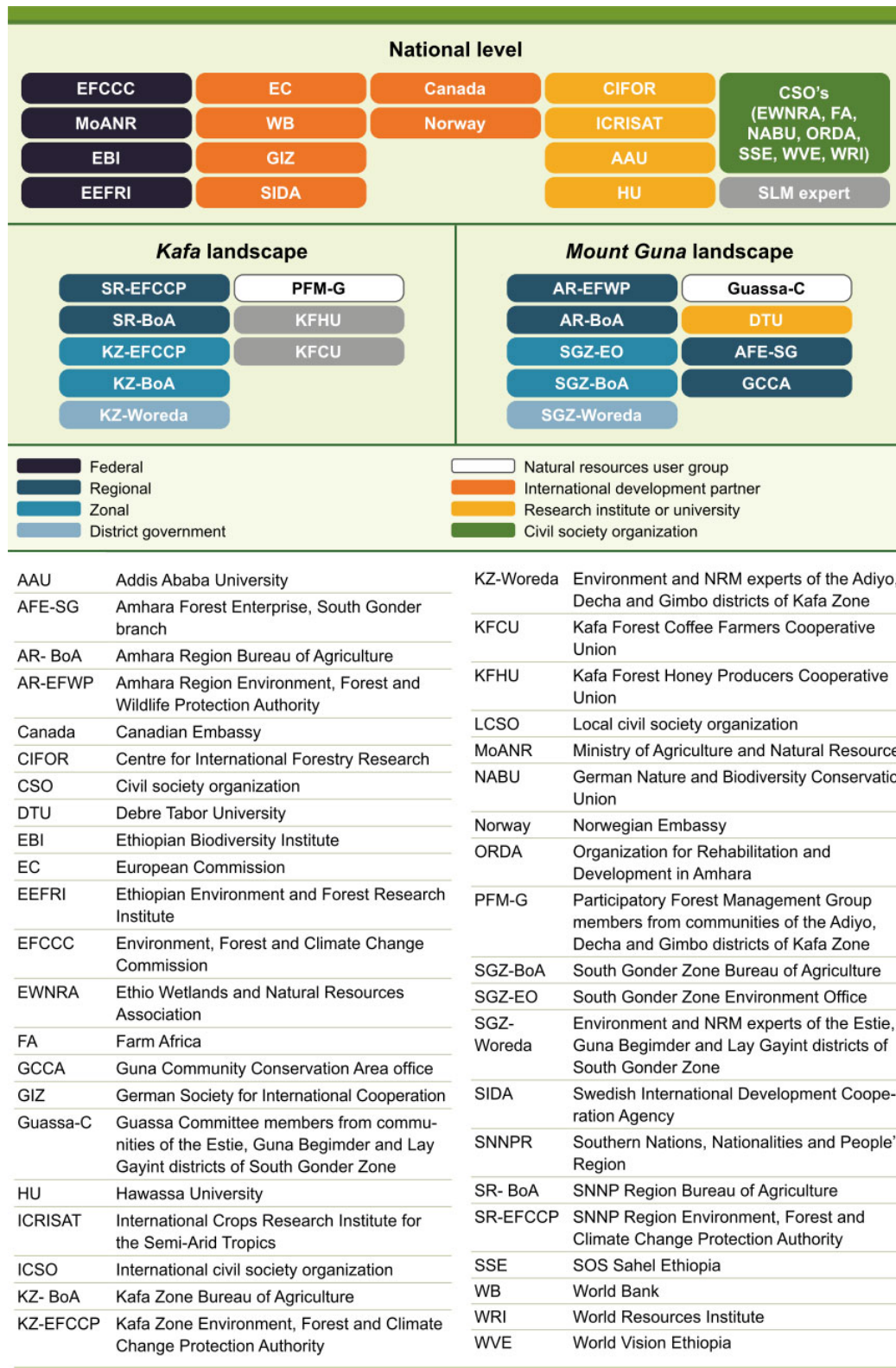
To allow for frank discussion and to guarantee confidentiality, we have made sure that experiences and perspectives do not refer to individuals but to organizations. Figure 4 lists all institutional abbreviations used to support evidence. In view of existing sensitivities, civil society organizations have been further anonymized, so that perceptions cannot be traced back to a specific organization. In cases where one individual from an organization was interviewed, only that organization's abbreviation is used, while in cases where multiple individuals from the same organization were interviewed, a specific number is added to the abbreviation. For example, EFCCC5 refers to the fifth interview with an official of the Environment, Forest and Climate Change Commission and LCSO2.2 refers to the second interview with an employee of a local civil society organization, which was coded "2." Figure 4 shows civil society organizations that were interviewed, in alphabetical order.

Interview topics included restoration tasks and responsibilities, drivers to restore, policy and project implementation mechanisms, cross-level and cross-sector interaction, land use planning, and the links between restoration and rural livelihoods. The semi-structured nature of the checklist provided sufficient width and openness to discuss other cross-scale and cross-level issues that were considered important by interviewees. An individual was asked certain questions only when the interviewer deemed them appropriate, and specific questions were added to clarify actor-specific restoration issues.

### Data analysis

We simultaneously collected and analyzed the data so that the interviews could increasingly focus on the most interesting and relevant issues that emerged at each specific governance level (Charmaz 1996). Our reflection on previous answers influenced the questions from the interview checklist that were asked to

Fig. 4. Overview of interviewed actors, their affiliation, and position in the case study.



subsequent interviewees. Interviews were recorded and fully transcribed to create a thick description (Geertz 1973) of FLR governance context as observed by actors within the Ethiopian FLR community of practice. All interviews and focus groups that were conducted in Amharic, were transcribed in English by an Amharic native speaker with a good command of English. We inductively and cross-sectionally coded all interview and focus group transcripts using ATLAS.ti software. We used scales, levels, and their temporal and spatial dimensions as sensitizing concepts to focus on cross-scale and cross-level interactions emerging from the data (Charmaz 1996, Bowen 2006).

We followed the path of analytical progression (Miles and Huberman 1994) in which we first tried to clarify the actors and processes that make up the FLR governance context in Ethiopia, then analyzed the characteristics of cross-scale and cross-level interactions, and finally elaborated the cross-scale and cross-level challenges that arise from these interactions. Data were condensed, clustered, sorted, and linked (Tesch 1990, Miles and Huberman 1994) as different leads were followed in the data. Data segments were sorted, compared, and re-categorized as necessary until a good fit between the data and the organizing system was found. The specific content of data segments helped to further refine each category. Codes evolved from general governance characteristics such as project focus, unclear land tenure, and lack of alternative livelihoods, until the final cross-scale and cross-level challenge categories were identified. As such, defining the categories was in itself a “scholarly achievement” (Tesch 1990). We use detailed interview quotes to strengthen the analysis of the different challenges, keep the human story in the forefront and make the analysis more accessible to a wider audience (Charmaz 1996). In addition, when an argument is made in the results, we list all interviewees highlighting the specific argument, providing transparency about how broadly an argument is supported and by whom (Bazeley 2009). We provide a detailed overview of the cross-scale and cross-level challenges that exist in Ethiopian FLR governance, which can be further refined and updated by other researchers (Charmaz 1996).

## RESULTS

We took the temporal and spatial dimensions of the ecological and governance scales as a lens through which to detect cross-scale and cross-level challenges (Cash et al. 2006) in Ethiopia’s FLR governance context. Before turning to the challenges however, it is important to give attention to two overarching issues that do not transcend scales and levels but that affect most cross-scale and cross-level interactions. First, the fact that poverty alleviation and food security have dominated Ethiopia’s political agenda for decades (MEFCC 2018b) has meant that sustainable land management efforts are strongly focused on increasing land productivity. This has diverted attention from a wider range of ecosystem functions and natural ecosystems. Second, important criteria determining the allocation of federal budget are population size and agricultural land surface [ICSO5.1]. As a result, regions with more forest and thus lower population density, smaller farmland, and fewer livestock receive less federal budget [GIZ7]. Nevertheless, restoration potential is mainly found in areas with a lower population density. The fact that the budget allocation does not take into account the restoration potential may make it more difficult to achieve the restoration targets [CIFOR]. In general, there is a disconnect between the national

restoration targets and the public resources available locally for sustainable forest management and area enclosure. Financial resources coming from higher levels are often just enough to cover civil servants’ salaries, transportation costs, and stationary expenses, leaving little for the implementation of restoration efforts [KZ-Woreda1, SGZ-Woreda1, SGZ-Woreda2]. This lack of funding is particularly problematic in *woredas* where international development projects are not being implemented or planned.

Turning to the theoretical focus of this article, we identified five cross-scale or cross-level challenges (SC) related to the implementation of FLR efforts in the Kafa Biosphere and/or Mount Guna landscapes (Table 1). We provide a background analysis with evidence from the interviews and focus group discussions conducted at the federal, regional, zone, *woreda*, and *kebele* levels.

### SC1 Short-term tree planting campaigns and quota mismatch with long-term restoration timelines

#### *Lack of planting preparation*

Tree planting efforts have been undertaken in Ethiopia for over four decades, and have received particular attention since the beginning of the Ethiopian Millennium in 2007. Since 2015, the federal government’s attention has been set on reforesting an annual 1 Mha to meet the GTP II targets [EC2]. Over the years, however, federal attention for tree planting has usually only arisen during the tree planting season, and has not been preceded by proper preparation, nor by a clear strategy regarding identifying the exact locations where restoration targets can be achieved in the long term [AAU, SIDA]. “The tree planting campaign actually started 12 years ago with the Ethiopian millennium. Where are those 12 year old plantations now? For me, I wonder whether planting trees has not become a ritual exercise to show everyone we are committed, while we are not really seriously committed” [CIFOR].

The 2019 Green Legacy tree planting campaign, which has reportedly planted 4 billion trees, is an example of the short-term focus given to achieve policy targets [LCSO1, ICSO5.3, SR-EFCCP2]. The campaign was announced just months before the rainy season started [GIZ1, AAU] and the planting was done in late July, instead of early June, when the rainy season starts. This timeline did not give the planted seedlings sufficient time to grow and prepare for moisture stress during the dry season from September onward. “The Green Legacy campaign is an interesting one, but the issue emerged during April or May. It should have emerged starting in August last year” [SR-EFCCP2]. The eagerness of the federal and regional governments to meet the annual tree planting quota led to the planting of tree seedlings that did not reach the correct size and strength, just to count them as part of the ambitious quota. “The problem is that [nurseries] may not get the seed at the right time. ... With delayed sowing you have weaker seedlings or seedlings that need to be kept in the nursery for the next planting season. But they don’t keep those in the nurseries, they take them out and plant them anyway” [EEFRI].

Wanting to meet quota in a context of financial scarcity has also meant that local governments lack the resources to grow quality seedlings that have good chances of survival. An EEFRI



**Table 1.** Overview of identified cross-scale and cross-level challenges (SC) and their scale challenge type.

Challenge	Description	Type (Cash et al. 2006)
SC1	Short-term tree planting campaigns and quota mismatch with long-term restoration timelines.	(B) Temporal mismatch between the governance scale and ecological scale.
SC2	Planning horizons of restoration-related international development projects mismatch with long-term restoration timelines.	(B) Temporal mismatch between the governance scale and ecological scale.
SC3	Federal and international budget allocation for alternative livelihoods mismatches with sustained local restoration processes.	(B) Temporal mismatch between the governance scale and ecological scale.
SC4	Federal forest and land policies have not created secure land tenure conditions to promote local restoration efforts.	(A) Failure to recognize important interactions between federal and local governance levels.
SC5	Misalignment of the forest and landscape restoration portfolio in the cascading government structure.	(B) Misalignment between federal and local governance levels.

inventory of 540 nurseries in Tigray, Amhara, Oromia, and SNNP regions found that about half of the tree seedlings were bare-rooted, which means “you cannot really have success stories in the rehabilitation of degraded sites” [EEFRI]. “Currently we are using bare root seedlings, not potted seedlings. ... Imagine what happens when you plant. The majority will die!” [EFCCC7].

*Lack of post-planting management*

The attention given to meet tree planting quota is in stark contrast to the attention and budget for follow-up after tree planting to ensure that planted seedlings grow into mature trees through maintenance efforts and by protecting them from free-ranging livestock [EEFRI]. For many federal and regional authorities “raising and planting the seedlings is like reaching the end goal” [AAU]. At the local level, too, little attention is paid to formulating management plans that guarantee long-term restoration gains [EFCCC4, EFCCC5, GIZ4, GIZ6, HU]. “If you are planning to plant in a given site there should be a purpose and follow-up management plan. But the focus is just to put the seedlings into the soil” [GIZ6]. “Tree planting is a one-time campaign for the government. Once trees are planted through mobilization [of communities] there is no management and follow up from the government” [SGZ-Woreda2].

Rather than focusing on post-planting management, which is barely monitored by actors at higher governance levels, it has

turned out more urgent for local governments to meet the tree planting quota, at least on paper, in order to satisfy regional and federal government levels. “If you see their report, it is number of seedlings raised by type, then the number of seedlings planted, and then they indicate plan achievement in percentage. 60, 90 or 99% achieved! ... no mentioning of the quality, how is the sustainability, whether the seedlings planted are really surviving” [AAU]. “If you really reported the reality against the quota you would be completely penalized, and everybody was adding zeros” [AAU]. With zone and *woreda* governments being pressed to meet unrealistically high and ill-informed tree planting quota [EEFRI], a dissonance arose between the numbers reported and what is being achieved and sustained within each jurisdiction [AREFWP1, WB3, LCSO2.2]. “If you drive around the region, even now, almost 80% of the landscape is not treated. And yet the report shows that it is 100% treated. That is the major challenge” [AAU].

**SC2 Planning horizons of restoration-related international development projects mismatch with long-term restoration timelines**

*Short-term planning horizons*

Unrealistically short planning horizons of restoration projects, usually of three to five years, and even shorter effective implementation periods, have put pressure on implementing



actors to rush the process of creating local governance arrangements that seek to promote and sustain restoration processes [LCSO2.1, SR-EFCCP4].

For example, the short-term nature of CSO projects in Kafa caused a rush to establish participatory forest management groups, while creating such governance arrangements involves going through a social process of participatory forest boundary delineation, and forest resource assessment and management plan preparation that requires repeated community discussions, training, and convincing [LCSO1]. When such a process is rushed, the likelihood of failure at a later stage increases, for example, when rural communities turn out to not fully understand or feel committed to the process [ISCO5.3]. “If you did quality work, the participatory forest management group can sustain, but if you rush things ... and if you copy a management plan from another cooperative and simply collect signatures, it will fail in a short period of time. It needs time, especially to convince the community and create good understanding” [GIZ7].

Likewise, the planning schedules of donor-funded government projects do not take into account the challenges and delays associated with community work. “The REDD+ project has a project life of three years. As per the plan we had to establish the groups in the first quarter of the project period. However, only the resource assessment took us eight months until now. ... we are way behind the original schedule and are currently going to the fourth quarter” [KZ-Woreda3]. Most CSOs in the Kafa Biosphere phased out immediately after the participatory forest management groups were created and protection, development, and utilization plans were developed, but before these plans could be implemented and groups were upgraded into cooperatives [KZ-Woreda1, KZ-Woreda2]. The standard exit strategy of CSOs has been to hand over responsibility for the groups to involved local governments or rural communities [KZ-EFCCP, KZ-Woreda2]. However, *woreda* follow-up and support to participatory forest management groups in Kafa has been limited [PFM-G1, PFM-G2] because of a lack of logistics, finance, and skilled manpower [KZ-EFCCP, KZ-Woreda1, ICSO4, GIZ7].

Previous restoration efforts at Mount Guna also show that more time was needed to develop and strengthen newly introduced value chains that make restoration efforts viable in the long term [LCSO2.2]. When access to the Community Conservation Area was restricted, the IFAD project organized the young people in the *woredas* surrounding the enclosure to work on alternative livelihoods (bamboo products, beekeeping, and animal fattening) with the aim of reducing livestock pressure on the afro-alpine grasslands [LCSO2.1]. However, the project phased out and was handed over to the *woredas* and rural communities before IFAD could upgrade the youth groups into cooperatives. Subsequently, the benefits received by group members turned out to be too small to sustain the groups and complete the upgrade process without external support, as the group members switched to other income-generating activities. “The organized groups and associations are all gone now. They used to get incentives from IFAD, but the government was incapable to continue this. No one knows what happened to the equipment provided to the youth for bamboo processing. The project was not sustainable as it was a short-lived one” [SGZ-Woreda1]. Likewise, the creation of tourism facilities

took much longer than the four to five year support that the IFAD project could provide [LCSO2.1].

#### *Stand-alone restoration efforts*

A heavy reliance on international development partners who define their own FLR objectives and work plans at the higher level, and disburse funding to geographically scattered locations [ICSO2, KZ-Woreda3, DTU] has led to little focus on building on past efforts and create synergy with other restoration efforts at the local level. “There is a thinking of ‘our money’ rather than thinking with a broader, comprehensive outcome at local, national, and international level” [ISCO5.3].

Public authorities and CSOs in Kafa wanted to leave their own mark and did so by establishing their own participatory forest management groups [ISCO5.3] or their own value chain activities rather than focusing on strengthening existing ones. “To fulfil standards of the international market is not easy. A lot of projects come with this idea. They provide training or something like that, but the real gap is fulfilling material needs and satisfying the international buyers with the right quality standard” [GIZ7]. Meanwhile, many participatory forest management groups established by previous projects have not yet reached the self-sustenance stage, nor are they strongly connected to non-timber forest product value chains.

With international development funds that are managed at the zonal government level, *woreda* governments in Kafa have not always had the flexibility to work on activities they feel are the most relevant to provide continuity to earlier restoration efforts or in places of their jurisdiction where they experience the greatest restoration-related needs [KZWoreda2, KZ-Woreda3]. “Most of the projects that come here have their own program and tagged budget. This is a challenge for us if we want to respond to new developments and be flexible. The REDD+ project is funding activities in areas where little or no action is required while denying budget to other areas where much work is needed” [KZ-Woreda2].

In Mount Guna, several projects have undertaken similar capacity building activities to stimulate ecotourism without building on each other. “[Mount Guna] attracts many stakeholders, but they implement individually. ... If they just integrate and work together, the amount of budget that they invest in the mountain may change the real situation of the area” [DTU]. For example, three different projects took one community leader on an experience sharing and awareness visit to another community conservation area. “He said ‘okay, I am well aware about the importance of conservation. I have seen the effective conservation of Menz Guassa. Then, what shall I do? There should be some organization who can help us to go directly to the activity’” [DTU]. In addition to an experience sharing visit, there was also a need to build ecotourism facilities on Mount Guna, such as a small restaurant and lodge, so that tourists can actually stay. However, as a result of stand-alone restoration efforts that do not build on previous efforts, resources were repeatedly spent on experience-sharing visits, while no resources and technical assistance were devoted to building ecotourism facilities, which are still absent. The duplication of efforts, without implementing concrete activities on Mount Guna, ultimately failed to make ecotourism a reality, in order to help sustain restoration processes [GCCA2].

### SC3 Federal and international budget allocation for alternative livelihoods mismatches with sustained local restoration processes

#### *Livelihood benefits from participatory forest management*

Public and civil society actors in Kafa have mainly focused on placing more forests under participatory forest management, as donor funding is mostly directed toward building forest management capacity in rural communities and developing management plans. Only limited financial, expert, and material support have been provided to secure the benefits that participatory forest management groups derive from the forest by improving the quality and marketing of non-timber forest products such as coffee, honey, and spices [LCSO1, GIZ7, ISCO5.3, KFHU]. However, shortly after participatory forest management efforts began, it became apparent that the benefits communities were getting from their sustainably managed forest were insufficient to compensate them for their forest management work and for the lost income opportunities of communities for not extracting timber products or converting the forest to other uses [PFM-G2, ICSO3, GIZ5, KZ-EFCCP, SR-EFCCP1, EFCCC4]. “We talk only about the carbon gains we make, not about the economic benefits that farmers lose. By degrading you get something. You have to make clear there is a cost. Who is going to bear that cost?” [CIFOR].

It has been indicated that forest benefits for participatory forest management groups are lower than expected, for example, because groups are not allowed to replace fallen or old coffee stands in the forest with new seedlings [PFM-G2] and because groups had expected to receive REDD+ funds for better management of their forest. “As to the success [of participatory forest management] I have a big reservation because the communities are not yet generating enough income from the sector to keep on protecting the area. There is a big expectation. You live with expectation for a limited period of time” [HU].

Local governments currently do not specifically support forest management groups, neither in terms of expertise nor materials [PFM-G3, KFCU]. “It would have been great if the *woreda* supports us. We can say that we are clapping with one hand. It is the participatory forest management committee alone that is making efforts” [PFM-G3]. While CSOs such as Farm Africa, SOS Sahel and GIZ have made efforts to strengthen non-timber forest product-based livelihoods, for example through the establishment of the forest coffee union, the forest honey producers union and the creation of value chains related to spices [ICSO5.2, KZ-EFCCP], they have faced a lot of funding problems in getting the quality of forest products up to export standards [GIZ7]. The feeling that alternative livelihood support is not receiving the necessary attention is problematic, given the increasing challenges posed by Kafa’s unemployed, landless youth, who are clearing the forest out of need to grow crops and earn a living [GIZ7, KZ-Woreda2].

#### *Livelihood benefits from area enclosure*

Also around Mount Guna, insufficient attention has been observed for the livelihood implications of past restoration efforts. When the 4615 ha Community Conservation Area was declared and closed in 2013 to protect its important water sources, Guna was the main forage source for the livestock of more than

20,000 households in the area [DTU, SGZ-Woreda3]. Traditionally, farmers let their livestock graze freely on Guna’s grasslands for three months, when the crop growing season would start in September. After the harvest in November, the cattle would be returned to the community. Although surrounding communities agreed to delineate Guna’s high-altitude, afro-alpine areas where frost conditions make it difficult to herd livestock anyway [Guassa-C1], the second delineation of Guna’s lower-lying areas met fierce and violent community opposition [Guassa-C2, Guassa-C3, GCCA1]. “The upper part of Guna was delineated. What we saw within two years was a dramatic change. ... We entered the Guassa [grassland] and could not find our way back because of the tall grasses. Walking on the top of the mountain was like walking on a sponge. Then came the second delineation and the whole thing went wrong. They wanted to extend the boundaries up to our doorsteps” [Guassa-C1].

The second delineation left no space on the mountain for livestock to stay during the growing season, with farmers being told not to go beyond the delineation year-round. At the same time, they were only allowed to use a cut-and-carry system to collect fodder from the mountain once every two years, which did not provide enough fodder for the livestock. For the communities, however, livestock is an important source of income and livelihood insurance when potato and barley harvests fail. A lack of livelihood alternatives fueled the conflict between the regional government and local livestock herders [GCCA1, GIZ6]. “Experts at the time failed to recognize this problem. They wanted ecology to be the focus, but on what do the farmers depend for their livelihood? The farmers said ‘where shall we go? Unless you ... create alternative livelihood options, we will not agree’” [AR-BoA].

The lower parts of Mount Guna were closed before the benefits of protecting the upper part could be seen, and before suitable alternative livelihoods, infrastructure to improve market links, or compensation payments were made for not using Mount Guna [Guassa-C1, Guassa-C3]. Since the enclosure of Guna, awareness raising sessions and experience sharing visits have been organized by different government authorities and a number of CSOs and universities to convince communities of the importance of protecting Mount Guna [GCCA1, AR-EFWP2]. “Several awareness raising and training sessions, and experience sharing missions were organized for influential people on the issue of Guna. ... none of these efforts were fruitful. ... Farmers should be provided with alternative livelihood options so that they are able to reduce their livestock number” [SGZ-Woreda2]. Awareness raising has had limited success because it has not been accompanied by initiatives to provide alternative feed sources and alternative livelihoods for community members who rely heavily on the mountain for fodder, despite the promise to receive these [SGZ-Woreda1, Guassa-C2]. “When the idea of delineating Guna first came, farmers were told that a road will be constructed, lodges build, and jobs created in the area. None of these materialized during the years that Guna remained protected. This caused resentment among farmers” [SGZ-Woreda2]. Although some farmers received alternative grass species for animal feed from the zonal and *woreda* governments, the demand for fodder far outstripped the forage yield of the supplied species [Guassa-C2].

#### **SC4 Federal forest and land policies have not created secure land tenure conditions to promote local restoration efforts**

##### *Use rights instead of ownership*

Since the military regime nationalized all rural land in 1975, successive governments have kept all land under state ownership to prevent the concentration of land into the hands of a few (Gebrewold 2016). The government feared that such a concentration would lead to the eviction of poor farmers, greater landlessness, and rural-urban migration. To guarantee access to land, the federal constitution states that every Ethiopian peasant has the right to obtain land without payment (Gebrewold 2016). This has been provided by periodic redistribution of land to landless people, after which farmers have user rights over their land. Such redistribution of land has taken place until the early 2000s. However, “even if this rotation stopped years ago, practically it is still in place. If you have some political complaints and are not aligned then the *woreda* administrator can take the land” [EC2].

The fact that rural communities have only had user rights and lack secure ownership of their private and communal lands has negatively impacted government-led restoration efforts. User rights alone have left community members reluctant to invest in their land and enforce local rules to ensure that communal lands are not degraded. As a result, public efforts to reduce land degradation have had limited success (Cronkleton et al. 2017), despite successive governments launching massive soil conservation programs and tree planting campaigns to this end (e.g., PSNP, SLMP, and more recently REDD+ and NFSDP). “The government is currently going in a direction where there is very limited ownership. ... establishing forests might not be possible because nobody thinks that they belong to them or nobody believes that, after some time, those people who restored can have a monetary return from the resource. ... If that is not guaranteed I don’t think community mobilization work will have a big contribution toward achieving [restoration] commitments” [GIZ1].

The general tendency of rural communities to use land without efforts to sustain and further improve the natural resource base [WB3] is not attributed to a lack of awareness but to rural communities not experiencing ownership over their lands [AREFWP1, HU, GIZ1, SGZ]. “Poor survival rates are a major problem. That has a lot to do with land tenure, because people don’t care about whether an animal gets into the planted area and destroys plants” [EFCCC5]. With clear ownership or utilization agreements being absent, rural communities are not convinced they can reap the long-term benefits of restoration efforts, resulting in a lack of maintenance of planted trees and soil and water conservation structures [SGZ, CIFOR]. “They construct physical soil and water conservation structures in January and then they demolish them in June and July. They plant seedlings in June, but next December and January we will not see the planted seedlings” [AR-BoA]. “When we lose rehabilitated landscapes because we haven’t determined who owns them, I don’t think we should spend that much time in planting trees” [CIFOR].

The lack of policies guaranteeing secure land tenure has led to significant fear among rural communities that the land they depend on will be redistributed for other uses. In Kafa, the fear

of losing access to the forest has had positive effects on the creation of restoration-oriented local governance arrangements because it has motivated communities to organize in participatory forest management groups. “The main purpose of establishing the group was to save our forest from agriculture investments. Our fear was that we will not be able to utilize the forest once it is transferred to investors” [PFM-G1]. “People are worried that the government may come and give the forest to investors, so that there is nothing to inherit by their offspring” [ICSO5.1]. Although participatory forest management only gives user rights to communities and no forest ownership, groups see their forest’s participatory forest management status as the best guarantee to maintain access to forest products and to ensure that their forest is not transferred to investors or destroyed through agricultural encroachment [GIZ7].

The rural communities around Mount Guna have the same fear of losing access to the grasslands on which they depend. Yet, no positive effects were observed in terms of creating restoration-oriented local governance arrangements. “Mistrust between farmers and the government arises from access to, and ownership, of Guna. Farmers have the suspicion that the government will stop them from herding their livestock on Guna” [Guassa-C2]. Farmers even refused alternative livelihood support from several development partners [DTU, GCCA1, Guassa-C2] as well as extension services from development agents [SGZ-Woreda2] thinking that the reason for support was to subsequently take away their rights to use Guna’s grasslands.

##### *Landlessness impeding sustainability of restoration efforts*

Land scarcity, population growth, and the termination of land redistribution policies have created a growing challenge related to landless youth [EEFRI, WB3, AR-BoA]. The landlessness of young community members, coupled with a lack of alternative livelihoods, has led to their reliance on communal forest or grassland resources. Charcoal production and livestock grazing have resulted in unsustainable exploitation rates, in addition to illegal conversion of forests and pastures into agricultural land [LCSO1, ICSO5.2]. Their reliance on communal lands has made it more difficult to find land for new restoration efforts and to sustain existing efforts [GIZ7, LCSO2.2, KZ-EFCC, KZ-Woreda2, PFM-G3, Guassa-C2]. “If you restore an area, and the landless and the youth do not get enough benefit in the watershed, the sustainability will be in question because they do not have land. Then they try to go and maximize their benefit in the communal lands, and destroy the area enclosure. ... Especially the youth are now powerful everywhere, and the other members do not really have the power to convince them to maintain the watershed, because they do not benefit” [ICRISAT].

#### **SC5 Misalignment of the forest and landscape restoration portfolio in the cascading government structure**

##### *Misalignment in the cascading federal structure*

Ethiopia’s federal structure has resulted in the misalignment of the FLR portfolio. Because regional states have the autonomy to shape their own governance arrangements, environmental agencies have not been uniformly replicated at the regional level, nor have their mandates been streamlined to the federal structure. For example, in SNNP region, the Environment, Forest and Climate Change Protection (EFCCP) authority has set up its own



structure down to the *woreda* level and is engaged in forestry efforts. However, in Amhara region, the Environment, Forest and Wildlife Protection Authority (EFWP) focuses on environmental protection and regulation, while the Amhara Bureau of Agriculture (BoA) is responsible for managing seedling production and mobilizing communities to plant trees [ARBoA]. Despite its mere focus on regulation, the Amhara EFWP is still in the lead to implement internationally funded forestry projects that come from EFCCC at the federal level, including NFSDP. “Here at regional level, what should be the role of our authority is unclear. In the context of Amhara region, we are not mandated to do afforestation. That is BoA. But there are projects like REDD+, NFSDP, Norwegian Forestry Group and others that are managed by our bureau. Regular afforestation activities, forest extension and watershed management are done by BoA. ... now BoA says ‘there are projects in your office. Why are they in the Environment bureau? They must have been in BoA’” [AR-EFWP2]. At the *woreda* level, Amhara’s EFWP does not have an independent office but rather is a unit within the Land Administration & Use authority [SGZ], which is part of MoA at the federal level.

#### *Incomplete institutionalization*

A major obstacle hindering the implementation of restoration efforts is that EFCCC does not have its own *kebele*-level extension services to provide in-depth forest management and forestry extension to communities [EFCCC6], including training on seed collection, raising seedlings, and planting, processing, and selling trees [SIDA]. When the forestry mandate was still with MoA, development agents provided extension support to forest groups through training on forest conservation, development, and utilization [ICSO5.2]. However, after the split of the forest and agricultural authorities in 2013, the performance evaluation and promotion of development agents was no longer based on support for forest-related issues, but on support for increased crop production and soil and water conservation, resulting in little attention being given to forest-related activities [SR-EFCCP1, SGZ-Woreda1, ICSO5.2]. “Many of us prefer the old institutional structure over the new one. ... The rate of forest destruction has increased since the new structure was introduced. The Natural Resource Management department does not give attention to forest-related issues as it responds to the agriculture office. We forwarded our complaints to the region time and again and the response we get is ‘it is beyond our capacity’” [KZ-Woreda2].

Although environmental experts work at the zone and *woreda* level, it is logistically impossible for them to reach every *woreda* or *kebele* that falls within their mandate [SGZ, SGZ-Woreda1, GIZ5, ICSO5.2]. “In the *woreda* structure, only one expert is made responsible for the forest groups that are found in the *kebeles*, which are located at far distance from each other. It would be impossible for an individual to cover all the groups in the *woreda*” [KZ-Woreda2]. For example, in Kafa Zone, the lowest number of *kebeles* within one *woreda* is 22, all of which must be covered by one expert [ICSO5.3].

The absence of EFCCC-employed development agents has implications for restoration initiatives that are implemented by the environmental authority. EFCCC needs to make use of the MoA-employed development agents who are in charge of natural resource management, which is not easy. “At *kebele* level,

development agents are accountable to BoA. That is our problem. They are not accountable to us. So sometimes it is difficult to work with them” [SR-EFCCP3]. These development agents provide extension services to farmers on soil and water conservation in general, and have not received detailed training on forest management and forestry value chains [EFCCC4, EFCCC5, SIDA, SGZ-Woreda3]. Because these development agents are already overburdened with agricultural extension duties, they do not have time to follow-up and ensure the survival of tree seedling. “I think it will be asking too much of agricultural experts to be in charge of forests. We see that forests are integrated as part of their annual working calendar, where they will be raising seedlings, planting them and then disappear. The experts go back to the harvesting and irrigation work, and no one takes care of the planted trees. As a result, there is planting year after year after year, but you don’t see saplings” [CIFOR].

## DISCUSSION

### Types of cross-scale and cross-level challenges identified

Cash et al. (2006) distinguished three types of cross-scale and cross-level challenges: (A) the failure to recognize important scale and level interactions; (B) the persistence of mismatches between scales and levels; and (C) the failure to recognize heterogeneity in the way scales and levels are perceived and valued by actors at different levels.

We observed two of these three types in Ethiopia. First, SC1, SC2, SC3, and SC5 are examples of a type B challenge, with SC1-3 illustrating cross-scale mismatch between the governance scale and ecological scale. A temporal mismatch with the long-term character of restoration-oriented ecological processes can be seen in the short-term focus of governance actors on tree planting (SC1) and the short-term planning horizon of international development projects (SC2), both of which attempt to influence relevant ecological processes. Moreover, because of a lack of federal and international budget allocation for alternative livelihoods, sustained coexistence of rural communities with restoration-oriented land use and land management changes cannot be guaranteed in the long run (SC3). SC5 is also a type B example, but involves cross-level misalignment rather than a cross-scale mismatch. Misalignment of the FLR portfolio between environmental and agricultural agencies has led to a cross-level misalignment in terms of restoration-relevant responsibilities and capacities along the multilevel government structure of authorities, preventing restoration efforts from being implemented effectively. Second, SC4 is a type A, cross-level misalignment challenge resulting from the failure to recognize important interactions between federal and local governance levels. The federal government has paid too little attention to addressing the negative impact of federal forest and land policies on local restoration efforts, because of the policies’ creation of insecure land tenure conditions. No type C heterogeneity challenge was identified in how actors at different governance levels perceive problems and solutions. Although we found divergent views across the agricultural and environmental sectors as to which restoration benefits are most important and how they should be achieved (author, forthcoming), such heterogeneity was not found across governance levels. This does not mean that type C challenges do not exist in Ethiopian FLR governance and further research efforts could identify them. Still, they are not

expected to be very prominent, compared to the type A and B challenges that we found.

The five challenges are a first exploration of the cross-scale and cross-level challenges that have emerged when implementing high-level restoration targets at the local level, and are not an exhaustive list of cross-scale and cross-level challenges in Ethiopian FLR governance. Additional research could further explore such challenges. More focus could be placed on the perception of different community-level subgroups regarding their relationship with higher level actors. This would avoid a limitation that could arise when targeting only members of resource user groups directly involved in local restoration efforts, as was done in this study. In addition, further research with stronger ecological expertise is recommended to see if potential cross-scale challenges can be identified with respect to the tree species planted as part of FLR efforts and the tree species found in the natural ecosystem.

### Comparison with other studies

Several studies provide evidence of similar challenges, indicating that the cross-scale and cross-level challenges we observed appear to be relevant to the Ethiopian highlands as a whole. Conducting research in two other Ethiopian regions, the Tigray and Oromia Regional States, Kassa et al. (2017) studied the strengths and weaknesses of participatory forest management and area enclosure. They found that community incentives to actively engage in participatory forest management and area enclosure were lacking due to land tenure insecurity on communal lands (similar to SC4). They also noted the extremely low economic benefits for rural communities to sustainably manage their forest, and an insufficient focus on income diversification accompanying participatory forest management and area enclosure (similar to SC3). This was also described by Birhane et al. (2017) who found that communities recognize the regeneration of ecosystem functions after areas are closed, but such positive attitudes are increasingly being tested as bylaws for managing area enclosures place greater emphasis on protection than on use and better economic returns. Finally, Lemenih and Kassa (2014) noted that local governments approached communities with proposals for area enclosures, and instead of allowing proper community consultation, it was a rushed process as local governments had to meet quota in terms of hectares under enclosure, determined by high-level governments (similar to SC2). However, once the targets are met, follow-up and ownership by governments has been observed to be extremely low (Kassa et al. 2017; similar to SC1). In this article, we clarified the cross-scale and cross-level interactions underlying the problems observed in other studies.

The cross-scale and cross-level challenges identified in this study show interesting similarities with the challenges identified as part of Ecuador's FLR governance context (Wiegant et al. 2020). These include a focus on short-term restoration results without sufficient attention for governance arrangements that fit the long-term nature of restoration processes. Both contexts also provide evidence that the short-term planning horizons of restoration-oriented policies and projects mismatch with restoration timelines. A cross-level challenge exists in both countries that is caused by a failure to recognize interactions between national and local levels. Although in Ecuador, it emerged out of a lack of attention by the national government to build the required local

land use planning capacity (Wiegant et al. 2020), in Ethiopia the challenge arose from the federal government that paid too little attention to address the negative consequences of insecure land tenure conditions at the local level. In both cases, this led to an ineffective and unsustainable local implementation of restoration efforts. A notable difference is the fact that no type C scale challenge was identified in Ethiopia, whereas this was observed in the context of Ecuador. This challenge entails the failure to recognize heterogeneity in the way scales and levels are perceived and valued by different actors.

### Reflection on the cross-scale and cross-level challenge concept

The cross-scale and cross-level challenges typology of Cash et al. (2006) has helped to draw attention to the challenges that arise when actors at multiple governance levels seek to influence relevant processes on the ecological scale. Most of the challenges we identified are anchored in systemic logic related to political processes, or how international development assistance is delivered. For example, the co-management arrangements that gave user groups new rights and responsibilities were created by projects with short-term planning horizons. As a result, delays and challenges that arose during the implementation process often could not be accommodated, and negatively impacted the quality and sustainability of the arrangements and the restoration processes they promote.

Although the five challenges are an essential part of explaining discrepancies between federal restoration targets and local action, they add up to and are influenced by other governance challenges that require equal attention. In Ethiopia, these include the issue that the most degraded lands are usually allocated for forestry and restoration, hence compromising success rates and economic potential; the issue that restoration policy implementation is not matched with the technical skills, experience, and finance needed at multiple levels to realize policy objectives; the issue of weak institutional memory due to high staff turnover at all levels, institutional reshuffling, and a loss of skills caused by a lack of training [MoA, ICSO4]; the lack of monitoring and evaluation; the issue that allocated budgets are not always spent adequately in the absence of clear rules and accountability mechanisms [GIZ7, ICSO5.3, SGZ-Woreda3]; and the growing challenge of landless youth due to population growth. Only by addressing the different types of challenges can FLR governance be significantly improved. In particular, unequal access to land and the lack of alternative livelihood options are key issues, as high-level restoration commitments further increase the pressure on land. In Ethiopia, growing challenges with landless youth underscore that restoration efforts need to ensure an equal distribution of restoration benefits and place greater emphasis on creating alternative livelihoods to make such efforts sustainable in the long run.

Cash et al. (2006) noted that cross-scale and cross-level challenges are pervasive, making them intertwined and sometimes difficult to distinguish. Trying to address them in isolation is not likely to lead to better restoration outcomes. Although clear land tenure provides the necessary preconditions to achieve FLR, it is not sufficient in itself to ensure that FLR occurs and is being sustained (Cronkleton et al. 2017). Creating more projects that provide alternative livelihoods for only four years may not sustain FLR processes either. Yet, when cross-scale and cross-level challenges

seem overwhelming, alternatives must be found that offer partial solutions. A nuanced scale-sensitive governance approach is required that takes observed cross-scale and cross-level challenges as a starting point to identify the governance arrangements and strategies that are needed in specific locations and at specific phases of the restoration process, with the aim to create cross-scale fit and cross-level alignment (Wiegant et al. 2022a, b). To make local restoration efforts effective, Ostrom (2009) highlighted that the analysis of interactions across multiple governance levels and across social and ecological systems can enhance efforts to effectively govern natural resources at the local level, and avoid simplistic “one-size-fits-all” solutions that frequently fail. Scale-sensitive governance could create more opportunities for actors at multiple governance levels to exchange and learn about local realities and prevent blind spots from arising. Scale-sensitive governance arrangements and strategies do not necessarily seek to eliminate systemic logics, as this might be hard to achieve, but rather look for ways to overcome the shortcomings of systemic logics, such as short-term planning horizons, to achieve successful local restoration action.

Gibson et al. (2000) emphasized that the types of patterns detected are greatly dependent on the choice of scale, the levels studied, and the detail with which phenomena are observed. Buizer et al. (2011) therefore recommend being clear and transparent about the scales of observation, observation techniques, and epistemological choices that are made. First, we prioritized getting acquainted with all restoration-relevant governance levels in Ethiopia, ranging from federal, to regional, zone, *woreda*, and *kebele* levels, rather than focusing most attention on only one or two governance levels. Although this affected the depth of understanding achievable at each level, it seemed the best way to understand the translation of national restoration targets into local action. It is likely that a more ambitious research design that allowed for more time to be spent at each governance level, or a stronger focus on ecological processes in the two landscapes, would have uncovered additional cross-scale and cross-level challenges. We therefore emphasize that this analysis of challenges in FLR governance needs to be further refined and updated by other researchers.

## CONCLUSION

With numerous forest and landscape restoration targets set by national governments, the governance arrangements used at the national and subnational levels to translate high-level restoration commitments into local action require particular attention. This study focused on identifying the cross-scale and cross-level challenges faced in Ethiopian FLR governance by capturing the experiences and perspectives of Ethiopia’s FLR community of practice at the federal, regional, zonal, *woreda*, and *kebele* levels. We identified five challenges: (1) short-term tree planting campaigns and quota mismatch with restoration timelines; (2) planning horizons of restoration-related international development projects mismatch with restoration timelines; (3) federal and international budget allocation for alternative livelihoods mismatches with sustained local restoration processes; (4) federal forest and land policies have not created secure land tenure conditions to sustain local restoration efforts; and (5) misalignment of the forest and landscape restoration portfolio exists in the cascading government structure. Identifying cross-scale and cross-level challenges gives policy makers a starting

point to improve existing and future governance arrangements that are designed to promote and sustain local restoration efforts. In Ethiopia, particular attention is needed for governance arrangements that create temporal fit with restoration processes and that ensure that restoration processes generate livelihood benefits for rural communities.

*Responses to this article can be read online at:*

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## Data Availability:

*The data that support the findings of this study are available on request from the corresponding author, DW. None of the data are publicly available because this could compromise the privacy of research participants. The reason is that interviews have focused on sensitive governance issues within a national context where openly sharing critique on government policy is not the norm.*

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