



From conflict to collaboration through inclusive landscape governance: Evidence from a contested landscape in Ghana

James Reed^{a,b}, Mirjam A.F. Ros-Tonen^{c,*}, Samuel Adeyanju^d, Abdul Wahid Arimiyaw^e, Kwabena Asubonteng^f, Bernard N. Baatuwie^f, Eric R.C. Bayala^{a,c}, Damian Tom-Dery^f, Amy Ickowitz^a, Yakubu B. Issaka^f, Kaala B. Moombe^g, Joseph Mumuni^d, George Wakesho^h, Mathurin Zidaⁱ, Terry Sunderland^{a,d}

^a Center for International Forest Research – World Agroforestry (CIFOR-ICRAF), Bogor, Indonesia

^b School of Global Development, University of East Anglia, Norwich Research Park, UK

^c Department of Geography, Planning and International Development Studies, University of Amsterdam, the Netherlands

^d Faculty of Forestry, University of British Columbia (UBC), Vancouver, Canada

^e Department of Geography and Rural Development, Kwame Nkrumah University of Science and Technology, Ghana

^f University for Development Studies, Tamale, Ghana

^g Center for International Forestry Research, Lusaka, Zambia

^h Center for International Forestry Research, Nairobi, Kenya

ⁱ Center for International Forestry Research, Ouagadougou, Burkina Faso

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ABSTRACT

The Western Wildlife Corridor (WWC) in Ghana's Northern Savannah ecological zone is a contested landscape where efforts to reverse widespread environmental degradation often conflict with local livelihood concerns and broader development objectives. Despite policy measures to devolve natural resource decision-making authority, poor environmental management, persistent socioeconomic challenges, and increasingly limited livelihood opportunities for people living within the corridor prevail. This study investigates environmental degradation in the WWC and natural resource governance using information on stakeholder perceptions from stakeholder workshops, focus group discussions, and key informant interviews. We also explore how natural resource management might be strengthened to better deliver social, economic, and environmental goals. We found that despite a history of contestation, stakeholders were able to agree upon specific issues of common concern and generate a collaborative vision for the WWC landscape. Transitioning toward such a vision requires significant investment in strengthening current governance structures and building natural resource management capacity within the corridor and beyond. Furthermore, persistent challenges of conflicting stakeholder objectives and issues related to coordination, corruption, and non-inclusion in decision-making about natural resources must be addressed to advance progress. Stakeholders were able to formulate specific recommendations and a participatory theory of change to inform the development of a sustainable landscape management plan and future evidence-based policy that could steer the WWC toward a more resilient and multifunctional system that equitably supports livelihoods, biodiversity, and wider economic development. The methods for inclusive engagement in environmental decision-making are extrapolatable to other contexts facing similar social-environmental challenges.

1. Introduction

Ongoing deforestation and environmental degradation in tropical landscapes, exacerbated by climate change and persistent poverty, require action across sectors and scales to address these 'wicked problems' (Sayer et al., 2013). This has led to a call for integrated landscape

approaches that mobilize multiple stakeholders around 'common concern entry points' to negotiate trade-offs between competing environment-development aims and land uses (Reed et al., 2016; Reed et al., 2020a; Sayer et al., 2013). Such negotiations about common concern entry points, trade-offs, and the allocation of potentially competing land uses commonly occur in multi-stakeholder platforms

* Corresponding author.

E-mail address: m.a.f.ros-tonen@uva.nl (M.A.F. Ros-Tonen).

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(MSPs), and these, therefore, play a key role in integrated landscape approaches (Kusters et al., 2018; Ratner et al., 2022; Shantiko et al., 2021; Siangulube, 2023). However, there is still limited evidence of how such negotiations evolve in practice, leading to persistent knowledge-implementation gaps (Bürge et al., 2017; Reed et al., 2020a; Toomey, 2016; Toomey et al., 2017). This paper addresses this gap by documenting the first steps of developing a theory of change in a multi-stakeholder process in northern Ghana, aimed at negotiating a pathway of change for the implementation of an integrated landscape approach in the Western Wildlife Corridor (WWC) (see 3.5). A theory of change (ToC) refers to a multistakeholder process, a product (intervention or evaluation tool), or a way of thinking (about change) that articulates how stakeholders think about a current problem, its root causes, the required long-term changes, and what needs to happen for these changes to come about (Mayne and Johnson, 2015; Rice et al., 2020).

The WWC (Fig. 1) is a contested savannah landscape where efforts to reverse widespread environmental degradation often conflict with local livelihood concerns and broader development objectives. It is a 104 km-long corridor forming part of the Mole Landscape and links the Mole National Park in Ghana to the Nazinga Game Ranch in Burkina Faso, enabling the migration of wild animals between the two countries (Bayala et al., 2020; Ouedrago et al., 2007). The dense vegetation cover within the corridor protects the Sissili River, securing local water resources for domestic and agricultural use (Bayala et al., 2020). The largest proportion of the resident population within the corridor (80 %) lives off agriculture (Owusu-Ansah, 2018) while remaining highly dependent on natural resources for their livelihood needs (Marchetta, 2011).

In recent decades, major pressures on the environment, such as expansive agriculture, illegal logging, legal and illegal artisanal and small-scale gold mining, uncontrolled burning, poaching, over-exploitation of non-timber forest products, woodcutting for fuelwood and charcoal, and pastoralism, have led to extensive degradation, destruction of food trees such as shea (*Vitellaria paradoxa*) and baobab

(*Adansonia digitata*), and increased risks to the livelihoods and wellbeing of rural communities (Agyemang 2012; Kyere-Boateng and Marek, 2021a). This is further exacerbated by inconsistent and overlapping customary and statutory governance structures and land and tree tenure arrangements and the erosion of traditional institutions (Ingram et al., 2015; Wardell and Lund 2006; Yaro 2013). Between 2001 and 2015, the northern savannah zone of Ghana lost around 77 per cent of its forest cover (Ghana Forestry Commission, 2021). In response, the government of Ghana has embarked on a series of policy measures that aim to devolve environmental decision-making authority from the national to local level. The community resource management areas (CREMAs)—a community-based natural resource governance scheme managed by local communities to reduce pressure on national parks and wildlife reserves—and the modified taungya system (MTS)—a reforestation scheme co-managed between the Ghana Forestry Commission (FC) and local communities—are pre-eminent among these measures (Acheampong et al., 2016; Agyare et al., 2015; Foli et al., 2018; Ros-Tonen et al., 2014). These initiatives, introduced respectively in 2000 and 2002, devolve decision-making authority to the local level to improve local livelihoods through sustainable forest and farmland management (Adeyanju et al., 2021).

While these measures are encouraging, ongoing environmental degradation in the WWC, along with increased conflicting interests and persistent socioeconomic challenges, suggests that the policies or the devolution of environmental decision-making are ineffective in addressing the environmental and development challenges (Adeyanju et al., 2021). This raises the question of whether the devolution of natural resource management in Ghana more accurately reflects rhetoric rather than substance (Ahmed and Gasparatos, 2020; Mawutor and Hajjar, 2022; Murray et al., 2019; Shackleton et al., 2002) or why the promise of performance has failed to materialize in reality.

This study explores stakeholder perceptions of current environmental degradation and natural resource management in the WWC and

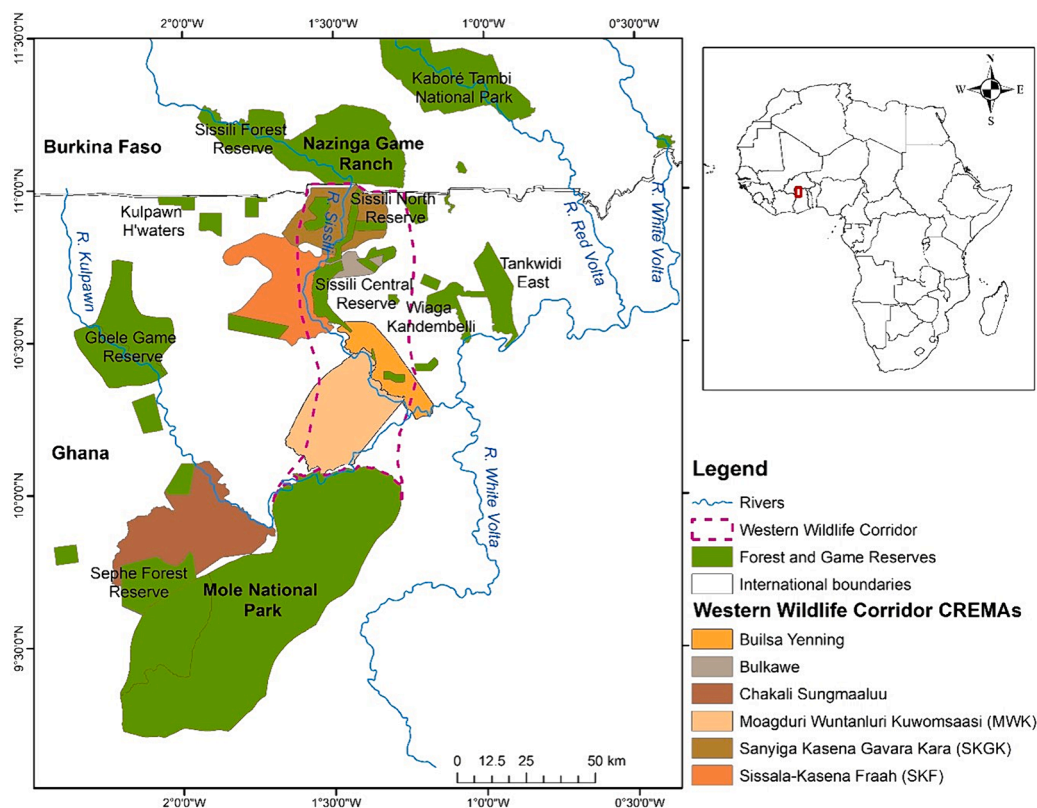


Fig. 1. The Western Wildlife Corridor (based on data from the Ghana Forestry Commission and ArcGIS hub. Source: adapted from Ouedrago et al. (2007)

how the current governance system can be strengthened to better deliver social, economic, and environmental goals, focusing on the negotiation process to develop a theory of change for common action. This was done as part of the COLANDS initiative (Collaborating to Operationalize Landscape Approaches for Nature, Development, and Sustainability), led by the Centre for International Forestry Research (CIFOR) in collaboration with the Universities of British Columbia and Amsterdam, and partner organizations in the countries of implementation (Ghana, Zambia, Indonesia) (Reed et al., 2020b) (<https://www.cifor-icraf.org/colands/>). In Ghana, on which this paper focuses, the main partner organization is the University for International Development Studies.

Specifically, we investigate the following research questions:

- How do stakeholders perceive landscape challenges and the underlying drivers in the WWC?
- How do stakeholders' views of and aspirations for the management of the WWC differ?
- How are stakeholder objectives reconciled and conflicting interests overcome through enhanced and more inclusive engagement in developing a pathway and theory of change?

2. Methods

As part of the COLANDS initiative (see Section 1), we conducted two stakeholder workshops in Bolgatanga in northern Ghana in April and September 2022, during and after which six focus group discussions and eight key informant interviews were held.

Workshop participants included both internal and external actors regarded as key stakeholders in the management of the WWC representing central government agencies (the Wildlife and Forest Services Divisions of the Ghana Forestry Commission (FC), Environmental Protection Agency (EPA), Ministry of Food and Agriculture (MoFA)), local technical staff of the Water Resources Commission of Ghana, and representatives of local governments, Traditional Authorities, non-governmental organizations (NGOs), community-based organizations, academia and research organizations, and the private sector (Table 1). Although the private sector is usually poorly presented in such multi-stakeholder processes (Upla et al., 2022), a fruit company, an ecological restoration company, and an alliance of shea nut producers and buyers participated in the workshops. All participants mastered English, so no translator was needed. The workshop venue was a local hotel, and, in accordance with local customs, participants were compensated for their transportation costs and time (T&T) while transportation (if needed), accommodation and meals were provided.

The stakeholder engagement process aimed to identify stakeholder perceptions of the key challenges obstructing effective landscape governance and management in the WWC; enhance the understanding

Table 1
Overview of research participants*.

Category	Workshop 1	Workshop 2	Key informant interviews
Traditional authority/elderly	11	11	2
CREMA body/community representative	15	11	2
Municipal government	1	2	
District government body	3	6	
National/Regional government agency	9	8	1
Private sector	2	2	1
NGO	4	5	1
Research organization	10	15	1
Media	1	2	
Total	56	62	8

* Duplication occurs across the columns.

of the drivers of those challenges; encourage stakeholder negotiation to identify actions, mechanisms, and pathways that reconcile competing interests; and stimulate transformative change.

The specific aim of the workshops was to co-produce a theory of change informed by principles of integrated landscape approaches (Sayer et al., 2013) that would address current unsustainable landscape governance and management and associated conflicts in the Western Wildlife Corridor. To collaboratively develop the theory of change, we followed the methodology described in Reed et al. (2022) (Fig. 2) based on a similar process applied in Zambia to test its replicability and applicability in a different geographical setting.

The workshops were designed to facilitate discussions around mutually desired visions of a sustainable WWC according to the perspectives of different stakeholder groups and to elicit different stakeholder perspectives and objectives related to the management of the WWC. The facilitation aimed to identify common concerns and entry points, reveal conflicts and contestations, and work toward reconciliation by facilitating a plenary discussion in which the diverging outcomes of sector-specific discussions were brought together (see 3.5). The final output was a shared vision from stakeholders for the WWC on a pathway of change (PoC) with agreed key short-, medium-, and long-term interventions for working toward this envisioned landscape and key indicators of success (Steps 1–7 of Fig. 2). The remaining steps are ongoing processes with broader landscape stakeholder consultations completed and analysis ongoing (Step 8) before collating the various information sources into an updated management and monitoring and evaluation plan (Step 9).

The first workshop focused primarily on identifying the perceived key land-use issues and drivers of landscape change in the WWC (see 3.1, as well as the existing barriers to overcoming such barriers (see 3.3). This information was triangulated with key informant interviews after the second workshop and secondary data.

The second workshop built upon these findings and encouraged stakeholders to engage in deliberative negotiations to reconcile competing objectives (see 3.2), identify a common vision for the WWC (see 3.4), and formulate potential pathways toward realizing this vision (see 3.5). During this workshop, visionary maps were made of peoples' desired futures through participatory mapping. The commonly conceived long-term vision for the future of the WWC with associated objectives and contributing activities (Fig. 5) was based on participants' collective arrangement of sticky notes on the wall and discussions on how different activities should be aligned with the objectives.

The entire process aimed to assess the enthusiasm for a move toward a more inclusive landscape governance system that better recognizes the diversity of stakeholder needs. Sections 3.4 and 3.5 draw from the second workshop (also referred to as the ToC workshop, with ToC standing for theory of change). Appendix A in the Supplementary material provides details of the setup of both workshops. To generate a deeper understanding of the various stakeholder perspectives that influence the WWC, we conducted five sector-specific focus group discussions during the second workshop with stakeholders from the government, NGOs, the private sector, traditional leaders, academia, and CREMA executives. Due to the limited number of participants representing these sectors, the private sector and NGO representatives were put together.

The stakeholder groups were tasked to define two short-term goals (5 years), two medium-term goals (5–10 years), and two long-term goals (to be achieved in ten or more years) related to the vision statement. They were also asked to list the activities deemed necessary to achieve each goal.

We assumed that having sector-specific colleagues work together to define their goals before plenary discussions were held would facilitate frank discussions and enable participants to come up with a relatively representative summary of a position from their stakeholder group. All stakeholder groups were then brought together in plenary to share their objectives and encouraged to negotiate the objectives and develop a shared vision and theory of change. This discussion was guided by an

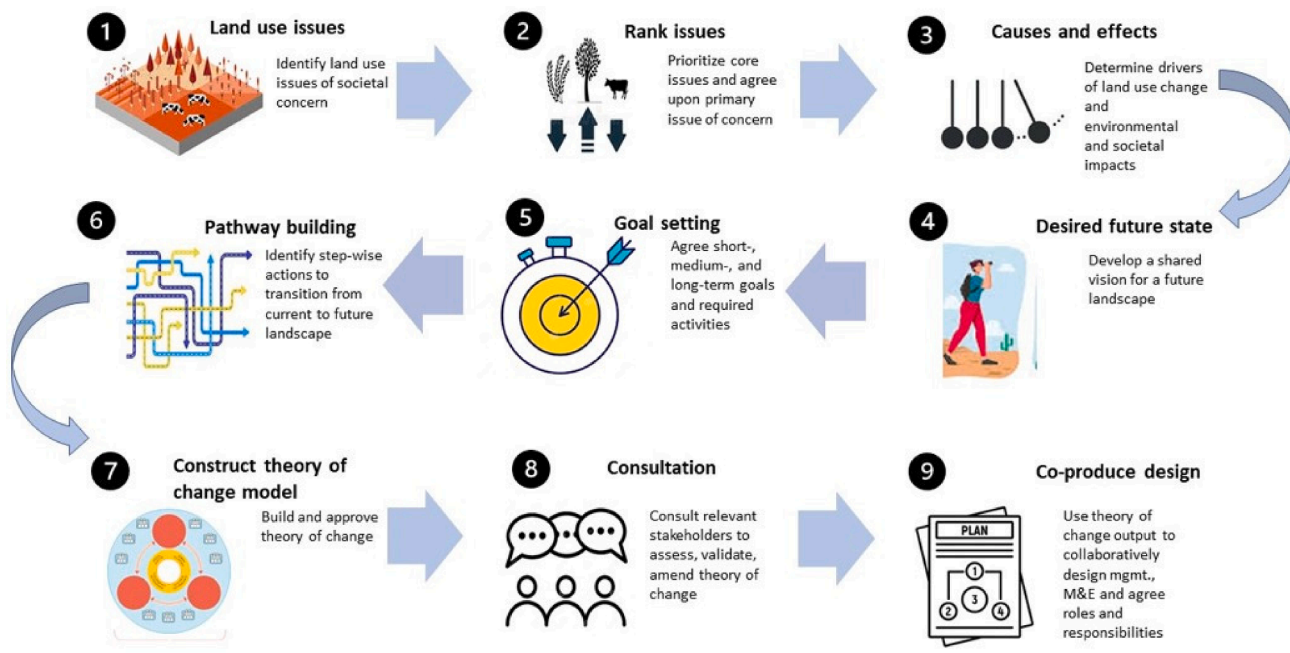


Fig. 2. The nine steps of theory of change development ().
Source: Reed et al. 2022

independent and impartial facilitator who was not affiliated with any of the convening or participating organizations.

Finally, to complement the results of the ToC workshop and deepen insights into opinions on ways to reconcile competing development and conservation or land-use objectives at the landscape level, we conducted eight key informant interviews, particularly focusing on hindrances and opportunities for stakeholder mobilization, reconciling competing land uses, and actions for improved landscape governance (see [Appendix B in the Supplementary material](#) for the questionnaire). The key informants were selected purposively to ensure a good representation of all stakeholder groups.

Workshop and focus group reports and the transcripts of key informant interviews were coded, and codes aggregated into the larger themes addressed in the analysis presented in the next section. This was done in an Excel file. An overview of the codes is presented in [Appendix C in the Supplementary Material](#).

3. Results

3.1. Drivers of land-use change in the WWC

During the workshops, focus group discussions, and key informant interviews, participants were encouraged to elicit what they perceived as the key issues of concern impacting the WWC (i.e., Steps 1 and 2 of [Fig. 2](#)). Participants identified various issues that spanned the social-ecological spectrum, including agriculture (shifting cultivation, commercial agriculture), small-scale mining ('*galamsey*'), bushfires, and unsustainable 'bush cuts' for charcoal, lumber production, commercial logging of rosewood (*Pterocarpus erinaceus*) and firewood collection. Furthermore, some stakeholders were concerned that transhumance has resulted in overgrazing, competing demands for grassland, water, and other natural resources, deforestation, and wildfires. Conflict in Burkina Faso, resulting in migration into northern Ghana, added to the pressure on natural resources, resulting in competing demands. Underlying these issues is a sense of actual and perceived loss of livelihood opportunities at the community level, the eroding role of traditional authorities due to overriding state control over natural resources, abuse of control over natural resources by traditional authorities, and a perceived lack of

transparency in CREMA management. Specifically related to the CREMA, research participants also referred to the lack of funding to sustain the community-based governance model. Dwindling donor funding and the limited capacity of CREMA executives to attract funds for the CREMAs result in poorly resourced institutions and insufficient financial means for conservation activities, land-use planning, stakeholder mobilization, and monitoring.

In total, more than 30 issues were raised ([Table 2](#)), with some far more frequently raised than others ([Table 3](#)). Although it is not always possible to disaggregate the issues per stakeholder group, stakeholder-specific discussions and key informant interviews revealed some commonalities and differences across stakeholders. Regarding barriers to reconciling land-use objectives (see 3.3), almost all interviewees mentioned corruption, political interference and limited knowledge of laws and sustainable practices among stakeholder groups. Limited funding for stakeholder mobilization, awareness raising, capacity building, and monitoring and evaluation was specifically mentioned by CREMA executives, an NGO representative, and an academic. Farmer-herder conflicts were a main concern among actors at the community level: traditional authorities and CREMA representatives.

Regarding weaknesses of the current governance system, corruption and political interference were again the most-mentioned issues raised by most stakeholder groups. Poor coordination across governance levels and systems (e.g. statutory and customary governance) was mentioned by traditional authorities, NGO representatives, and academics—but not the interviewed government official. Exclusively raised by community-level actors (traditional authorities and CREMA executives) were government inaction, the lack of incentives for engaging in environmental governance, and deficient law enforcement.

However, after deliberation in plenary, stakeholders collectively agreed on the three most pressing issues of concern:

1. Weak governance and cooperation across scales (vertically and horizontally).
2. Agricultural expansion (local shifting cultivation practices and commercial agriculture).
3. Overexploitation of natural resources, including logging and mining.

Table 2
The key land-use issues in the WWC and their associated drivers of change.

Indirect/underlying drivers	Direct drivers/pressures	Implications
Poverty, (youth) unemployment, and livelihood needs	<ul style="list-style-type: none"> • Agricultural expansion in forest reserves and conservation areas (including shifting cultivation and commercial farming, mainly of cereals.^a) • Over-reliance on natural resources, leading to: • Illegal and legal small-scale mining (“<i>galamsey</i>”) • Overgrazing • Logging and woodcutting (rosewood, commercial lumber, fuelwood) • Unsustainable charcoal and fuelwood production • Bushfires 	<ul style="list-style-type: none"> • Constrained long-term sustainability of the corridor, compromising the movement of wildlife • Reduced landscape resilience due to deforestation, dwindling natural resources, and reduced vegetation cover • River and soil pollution due to mining • Reduced access to grazing lands, increasing pastoralists’ vulnerability • Land-use conflicts (e.g. between farmers and herders, large-scale land investors and communities) • Biodiversity loss, deforestation and depletion of natural resources, wildlife extinction, and reduced availability of non-timber forest products and other ecosystem services • Soil degradation • Non-enforcement of forest rules, bylaws, and sanctions
Weak governance	<ul style="list-style-type: none"> • Lack of cooperation and coordination among stakeholders (statutory/customary; cross-sectoral; between government agencies). • Weak governance structures and capacity at the community level. • Insufficient funding for stakeholder dialogue, land-use planning, and monitoring. • Erosion of traditional knowledge, taboos^c, and rituals. • Erosion of the role of traditional authorities. • Poor understanding and appreciation among government officials, traditional authorities, and community members of the corridor concept. • The seemingly poor commitment of traditional authorities to WWC governance. • Lack of community participation. • Corruption and political patronage (e.g., favoring political party members in granting rosewood logging permits) and interference when political allies are sanctioned for flouting CREMA rules). • Deficient knowledge and expertise “to do things right”. • Lack of women’s representation. 	<ul style="list-style-type: none"> • Constrained long-term sustainability of the corridor • Unequal benefit sharing • Exclusion of particular groups in decision-making (women, Fulani herders) • Reduced rainfall^b
Complex tenure arrangements	<ul style="list-style-type: none"> • “Illegal” exploitation of corridor resources by local and external stakeholders (e.g. lumber, gold, shea nuts, rosewood). • Contested boundaries. • Conflicts and a lack of cooperation between the contesting parties. 	<ul style="list-style-type: none"> • Constrained long-term sustainability of the corridor
Demographic pressure	<ul style="list-style-type: none"> • Growing demand for wood (for fuelwood, lumber, and charcoal), non-timber forest products (for household consumption and trade on local markets), and other natural resources in the corridor • Agricultural expansion to meet the growing demand for food and commodities • Influx of migrants fleeing violent conflicts in Burkina Faso and expanding settlements of Fulani herders in conservation areas. 	<ul style="list-style-type: none"> • Constrained long-term sustainability of the corridor • Competing claims and conflicts over land and natural resources
Climate change	<ul style="list-style-type: none"> • Reduced and erratic rainfall patterns • Higher temperatures • Longer periods of drought 	<ul style="list-style-type: none"> • Reduced agricultural yields • Siltation of water bodies • Limited availability of water for household use, farm activities, and wildlife • Increased susceptibility to bushfires • Wildlife migration
Inadequate funding to sustain the CREMA model	<ul style="list-style-type: none"> • Dwindling donor funding • The limited capacity of CREMA executives to raise funds • Poorly resourced institutions 	<ul style="list-style-type: none"> • Inadequate resources for conservation activities, stakeholder mobilization, land-use planning, and monitoring.

^a Rice is mainly grown on large-scale farms; millet, maize, sorghum, and cowpea by smaller-scale producers. Other commodities, such as cotton and jatropha, have been ventured in the past decades but collapsed after an initial rise in production (Jarzebski et al. 2020). This expansion is mainly driven by local actors, including cooperatives and individuals. In the Moagduri (MWK) CREMA, a large land area is managed by the government for local cooperatives (pers. observations, the authors).

^b In another COLANDS workshop in the same area, the elderly explained that the erosion of traditional rituals to attract rain resulted in reduced rainfall, while the younger participants attributed reduced rainfall to climate change (Bayala et al., 2023a).

^c Taboos are informal, site-specific norms based on customary rules designed to protect certain habitats or animal or plant species from overexploitation. For more details, see Colding and Folke (2001) and Yanou et al. (2023).

^d The main non-timber forest products, particularly generating income for women, include shea nuts, baobab leaves and pods, and game animals (Issaka, 2018). Source: Compiled by the authors based on a presentation by Issaka et al. (2022), workshop and focus group discussions, and key informant interviews. This was further triangulated with literature (Bayala et al., 2020, 2023a; Kyere-Boateng and Marek, 2021b).

Regarding the third issue, the discussion initially focused on illegal logging—mainly targeting domestic markets and those of neighboring countries (Hansen et al. 2012)—and illegal (gold) mining—mainly targeting export markets, with Switzerland (50.4 %) and the United Arab Emirates (27.1 %) being the main destinations (<https://www.statista.com/statistics/1309431/share-of-gold-exports-from-ghana-by-destination-country/>). However, as legal activities can also overexploit, it was suggested to eliminate the word illegal.

Further triangulation with secondary data aided in categorizing the issues, distinguishing between indirect or underlying drivers of change and direct ones that put pressure on the landscape (Step 3 of Fig. 2). Table 2 categorizes the indirect drivers as (i) poverty, youth unemployment, and livelihood needs, (ii) weak governance, (iii) complex tenure arrangements, (iv) demographic pressure, and (v) climate change. These lead to several pressures on natural resources and governance failures that compromise the long-term sustainability and

Table 3
Summary of stakeholder perceived barriers to landscape change and their proposed solutions.

Perceived barriers	Proposed solutions
<i>Limited financial resources</i> for environmentally friendly livelihood options; capacity building; and inclusive stakeholder mobilization and engagement (3+7)	Increased government support; establish a conservation trust; private sector sponsorship (e.g. mobile phone companies and banks); host trade shows and tourist tours; PES and carbon credit schemes; proceeds from confiscated logs and hunting permits; taxes collected by the District Assemblies
<i>Conflicting stakeholder objectives</i> between conservation and livelihoods; local and external actors; farmers and pastoralists (12+6)	Strategy for addressing conflicts; community consultations; enhanced mediation authority for chiefs; embed environmental issues into education curricula
<i>Weak governance structures</i> enabling corruption; unclear/overlapping jurisdictions; limited enforcement; and political interference (9+8)	Increase female representation in leadership and government; increase turnover of government staff; inventory of byelaws and associated awareness-raising; better engagement of traditional chiefs; community empowerment to enhance accountability
<i>Poor coordination</i> creating misaligned statutory and customary institutions; undocumented traditional bylaws; lack of policy awareness; complex tenurial systems; and limited inter-ministerial collaboration (2+4)	Neutral brokering organization to facilitate MSPs; community consultations; synchronize land-use plans; education and awareness-raising programs; better utilize effective government initiatives; utilize technology and media to reach rural areas
<i>Weak local capacity</i> inhibiting policy performance; public governance institutions; sustainable farming and natural resource management; resource mobilization; and equitable benefit sharing (1+3)	Training on sustainable NRM and monitoring; broader representation at workshops and decision-making spaces (including Fulani); strengthen CREMA structure and capacity; improved monitoring of social-ecological conditions of WWC

Note: The first number in brackets indicates how often the issue was coded in the workshop report and the second number indicates how many of the eight key informants interviewed mentioned the issue. Key: CREMA=Community Resource Management Area; MSPs = multistakeholder platforms; NRM=natural resource management; PES=Payments for Environmental Services; WWC=Western Wildlife Corridor.

Source: Based on the coded ToC workshop report and key informant interviews.

resilience of the corridor, the peaceful coexistence of people, and the free movement of wildlife.

3.2. Diverse but potentially reconcilable stakeholder objectives

The sector-specific focus group discussions (see [Appendix D](#)) revealed a broad range of stakeholder objectives within and for the WWC, with diverging interests and foci reflecting stakeholders’ specific backgrounds, mandates, and responsibilities.

Government actors emphasized the need to strengthen environmental governance, enhance equitable benefit sharing, and adopt environmentally friendly and sustainable practices in farming, natural resource use, and natural resource management (NRM). They envisioned achieving enhanced landscape resilience and multifunctionality through landscape restoration, including agroforestry, tree planting, and reforestation. They mentioned the development of sustainable livelihood opportunities as an explicit goal for the medium term (5–10 years).

Traditional leaders foregrounded goals related to strengthening their governance capacity and knowledge of statutory laws so that they can play a role in effective implementation, monitoring and evaluation. As a long-term goal (>10 years), they flagged the need for attitudinal change toward sustainability to create a resilient landscape. In general terms, they mention peaceful coexistence among people as a long-term goal.

CREMA executives envisioned actions related to strengthened governance (awareness raising of the benefits of CREMA, stakeholder involvement, and the effective implementation of bylaws), increased adoption of environmentally friendly practices (farming, hunting, NRM), and enhancing resilience and multifunctionality through tree planting and increased awareness of sustainable practices.

NGOs emphasized the need to promote inclusive NRM, with specific attention to gender equality, the inclusion of traditional authorities, and equitable benefit-sharing, while private sector representatives emphasized the importance of private sector engagement and the need to develop green value chains.

Academics were mainly concerned with enhancing resilience and multifunctionality through land-use planning and landscape restoration and strengthened landscape governance (notably stakeholder mobilization and collaboration, law enforcement, and sustainable funding independent from donors, e.g. through payments for ecosystem services, PES). They made no specific mention of facilitating sustainable practices other than, in general terms, referring to ‘facilitating sustainable livelihoods’ as part of landscape restoration.

Despite these differences, when asked about the ultimate long-term vision for the WWC and depict this visually, there was a great deal of

synergy between the groups and the participatory visioning maps produced. For example, most stakeholders emphasized sustainability, inclusivity, and equity, while the maps showed a multifunctional landscape with enhanced biodiversity and improved livelihood and income opportunities ([Fig. 3](#)).

The aggregated outcomes of the stakeholder group discussions generated the following partly overlapping draft vision statements:

1. A biodiverse and self-sustaining ecosystem that sustains the livelihoods of fringe communities.
2. A landscape with sustainable livelihoods, fostering unity among communities.
3. An integrated, organized, and resilient wildlife corridor that sustains livelihoods and water bodies and supports climate resilience.
4. A sustainable, equitable, and integrated landscape promoting synergies.
5. A corridor with a sustainable landscape, forest, and wildlife, supporting green value chains and livelihoods, and rivers flowing all year round.
6. A well-managed landscape with ecosystems restored with flora and fauna, rich biodiversity, clean air, water bodies, and livelihood activities well controlled.
7. A well-restored corridor with animals, trees, and flowing rivers, which is a source of diversified livelihood options and has inclusive landscape governance in place.

Participants then considered these various statements and worked collectively to discuss and negotiate an agreed common vision statement (Step 4 of [Fig. 2](#)) guided by an independent facilitator (see [Section 2](#)). The resulting statement was:

A resilient and multifunctional landscape sustaining diversified livelihoods, biodiversity, and green value chains through inclusive and equitable governance.

While a common vision was relatively straightforward to negotiate and agree upon, the stakeholder groups suggested contrasting short- to long-term goals, i.e., the key process indicators they considered necessary to move toward the common vision.

For example, in the short term, the group of traditional chiefs suggested a need for law reform, while the government officials felt the current legislation was adequate but that local governance needed strengthening. The private sector stressed a need for green value chains, while the academics noted a need for sustainable financing mechanisms independent of donors (see [Fig. 4](#)). The groups, therefore, spent significant time negotiating the various proposed short to long-term goals as

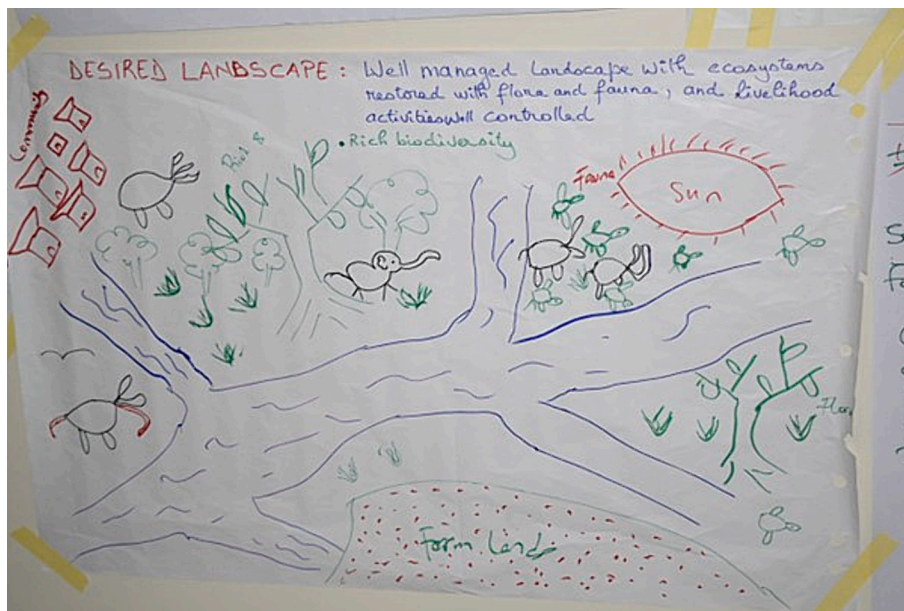


Fig. 3. The participatory map and vision statement for the WWC produced by one of the stakeholder groups.

well as the current barriers in place that would restrict achievement of those goals (next section) before working together to agree on a refined set of goals (Step 5 of Fig. 2).

3.3. Current barriers to change and potential solutions

The—sometimes heated—focus group discussions and key informant interviews revealed a broad range of barriers that could obstruct efforts toward achieving the common vision for the WWC. The opportunity for all stakeholders to share their grievances led to the recollection of disturbing experiences and allegations of corruption and power abuse. Table 3 categorizes and summarizes the five most commonly recurring and partly overlapping barriers that stakeholders perceived to be the most urgent to address, together with the suggested interventions to overcome them, which are further elaborated on in the sub-sections below.

3.3.1. Limited financial resources

Limited financial resources due to persistent poverty at the community level obstruct engagement in decision-making due to unaffordable opportunity and transportation costs, thereby hindering inclusive and effective landscape governance. As one community member noted, “The engagement process takes a lot of time and commitment.” Moreover, limited viable livelihood opportunities and capacity building lead to increasingly exploitative natural resource use, including through acting on behalf of (resource-depleting) commercial enterprises. Due to low education, many community members feel ill-prepared to engage adequately.

Stakeholders in the WWC are scattered across the landscape, and telecommunication infrastructure is poorly developed. Bringing people together for decision-making involves a lot of time and financial resources. A community member noted that “financial resources for bringing people together are simply lacking”, lamenting the dwindling of donor-funded projects and associated resources in the WWC in recent years. These sentiments were also shared by the Fulani representative, the private sector, and the traditional chiefs, suggesting a broad consensus on the issue. Furthermore, participants emphasized the inability to maintain interventions and objectives once project funding expires; even when goodwill exists, the lack of finance and support inhibits action. Financial constraints were also associated with the costs of

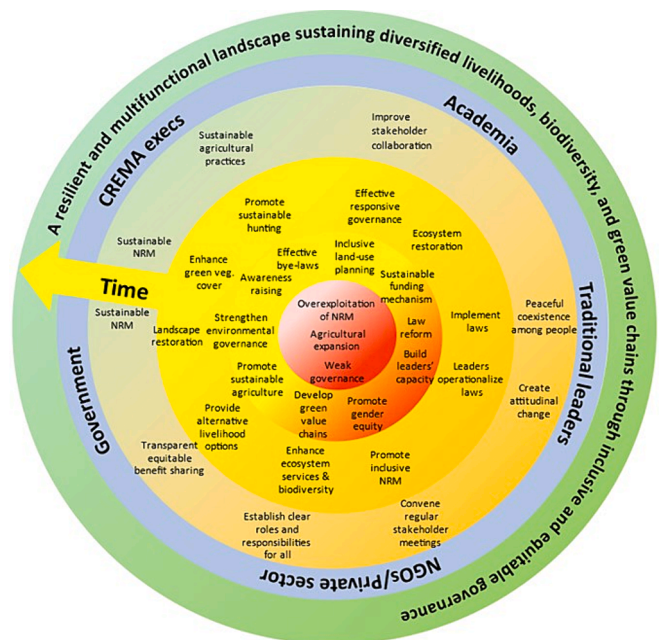


Fig. 4. Short-, medium-, and long-term goals proposed by each stakeholder group. The centre of the figure represents the core issues obstructing sustainable management of the WWC; the subsequent rings represent the short, medium and long-term goals, respectively. The blue ring lists the stakeholder groups, and the outer ring the commonly defined vision. Source: Compiled by the authors based on the workshops, focus groups, and interviews.

developing a land-use plan for such a large area and subsequent implementation and monitoring requirements.

Participants stressed that the government should “take the initiative” in supporting multi-stakeholder inclusive governance and educating and sensitizing local people on the benefits of sustainable natural resource management. Several suggestions for fund-raising mechanisms to finance the multi-stakeholder platform independent from external actors were made during workshop discussions and key informant

interviews (see [Table 3](#)). Representatives of government, private sector, NGOs, and CREMA executives stressed the importance of transparency and a clear benefit-sharing mechanism for any revenue generated to avoid dissatisfaction among the stakeholders.

3.3.2. *Conflicting stakeholder objectives*

Conflicting stakeholder objectives due to competing resource claims and diverging requirements, needs, values, and levels of authority and influence were frequently mentioned as barriers to progress ([Table 3](#)). As an important wildlife corridor, the WWC has long been the focus of conservation efforts from local and international NGOs. However, conservation objectives demanding large expanses of protected areas limit access for communities that depend on natural resources for their livelihoods, leading to encroachment of game and forest reserves due to a lack of viable farmland and rising population density. Legal and illegal logging (notably of rosewood), artisanal gold mining, and commercial agricultural expansion by local and external actors further compound the competition for land and resources. Participants noted that external actors often arrive without the knowledge or consent of local people, who then lack the power or authority to intervene and protect the resource.

Conflicts between farmers and Fulani pastoralists over land and water resources have been stubbornly persistent for the past 20 years and have led to environmental degradation, recurrent and increasing acts of violence, and the social marginalization of the Fulani herders (see [Bayala et al. 2023b](#) for an extensive literature review). Persistent mutual resentment and distrust abounded, reflected in extreme positions like Fulani herders “raping people’s wives and stealing people’s cattle”. However, participants considered that well-designed, mediated negotiation processes could be potentially conciliatory. Addressing current conflicts would require a stakeholder analysis and mobilization strategy and awareness raising of their respective roles, threats and impacts of their actions, and potential conflict resolution opportunities. Community-wide consultation processes could help establish clear rules or guidelines determining where Fulani herders can or cannot access grazing land. Traditional leaders would welcome greater authority to mediate such processes, establish and enforce rules, and determine land boundaries. Incorporating environmental issues and resource management conflicts into the education curricula could help raise awareness, build empathy, and inspire attitudinal change to help overcome conflicts and realize shared objectives.

3.3.3. *Weak governance*

While all research participants considered weak governance a major issue, traditional authorities, NGO staff, and an academic praised decentralized structures and the intention to engage communities through the CREMAs as strengths of the current governance system, while a state actor considered the competence of staff in government agencies a strength. Traditional authorities, CREMA executives, and the private sector and academia representatives lauded the well-resourced and effective Forestry Commission, citing successful tree planting initiatives.

However, all workshop participants and interviewees recognized widespread corruption, lack of law enforcement, and political interference with resource management decisions as prevailing barriers to addressing landscape issues. Examples included a chief refusing to stop a foreign company from engaging in illegal logging and a minister expanding a big farm into a CREMA area without a chief being able to intervene. They also noted that local governance capacity was further complicated by an ongoing dilution of the chief’s authority to exercise

customary regulations and increasing instances of overriding traditional authority by the central government.¹

An NGO representative and a female CREMA representative observed the low representation of women in governance structures and decision-making processes. The latter also lamented the lack of transparency in law enforcement, with both traditional and statutory governments displaying blatant ‘favouritism’ to certain actors. A private sector actor alleged that “local politicization of issues affects participation in environmental decision-making and obstructs law enforcement”. A traditional chief noted outsiders coming into traditional areas with letters allegedly from the top government level to exploit resources without consulting them and circumventing traditional rules.

The impact of corruption and political interference extends to the community level. The chiefs themselves openly admitted their vulnerability to corruption due to low pay, though some community members perceive otherwise. They acknowledged human fallibility and temptation by financial incentives to improve livelihoods. Community members feel disempowered or reluctant to report resource exploitation by outsiders for fear of losing their livelihoods to authorities assumedly enforcing the law.

During the ToC workshop, opportunities to address governance weaknesses mainly focused on the role of government officials and traditional authorities (see [Table 3](#)). This discussion—excellently facilitated by the impartial facilitator—was remarkably open, with those being accused of corruption being present and partly even acknowledging and explaining their engagement in corruptive practices. Concrete suggestions included ensuring greater representation of women in government positions and regular changes in government staff to reduce the potential for power abuse and corruption. An inventory of existing bylaws at the district level and an associated awareness-raising campaign could help improve understanding, transparency, and enforcement of bylaws.

The NGO, CREMA and private sector representatives claimed that engaging the—generally highly respected—chiefs in environmental governance and strengthening their capacity and authority was essential. Academia representatives emphasized the need for community empowerment to demand the chiefs’ accountability (see [Appendix D in the Supplementary Material](#) for details).

3.3.4. *Poor coordination*

Poor coordination among actors and organizations across scales of decision-making was identified as a significant barrier. The distinction between, and misalignment of, statutory and customary institutions compounds this challenge. Notably, traditional bylaws often remain undocumented, while national policy statements often fail to reach or resonate with local communities. The prevalent customary tenurial system, involving 80 % of the land, adds another layer of complexity, with each Traditional Area—of which there are over 423 nationally and 112 in the five northern administrative regions ([COLANDEF, 2023](#))—boasting its own set of rules, increasing uncertainty over land-use and access regulations. Adding to the complexity is that CREMA lands outside gazetted reserves are under traditional authority, but timber harvesting in these areas requires approval from the Forestry Services Division of the Ghana Forestry Commission.

Also, actions within and between government agencies are often poorly coordinated. Although some regional and district-level interactions between institutions exist, the tendency is rarely to update each other on institutional activities for collaborative actions. The only exception to this is at the occasional request of the Regional Coordinating Council, consisting of region- and district-level representatives of

¹ As noted by an anonymous reviewer, this creates a dilemma between the need to assign more authority to traditional authorities to strengthen local governance while the very same actors are simultaneously being accused—and acknowledge—of being involved in corruption and political interference.

statutory government and two chiefs from the Regional House of Chiefs. This council is responsible for monitoring, coordinating and evaluating the performance and budget use of the District Assemblies and the coordination of public services in the administrative regions (Section 141–142 of the 2016 Local Governance Act (Act 936)).

Additionally, there were discussions and misunderstandings about jurisdictions and authority, such as the Forest Commission questioning the authority of community members to arrest illegal loggers or community members questioning the legitimacy of CREMA officials or officials from the Forest Services and Wildlife Divisions of the FC to arrest illegal operators.

The many projects initiated within the WWC in recent years have further compounded cross-scale coordination issues. This point was well articulated by a traditional chief who stated, “I think the various organizations operating within the landscape are creating confusion among our local people. Projects being implemented have different timelines, and the lack of coordination among the NGOs is really affecting the beneficiary communities.” This is due to several factors, including an emphasis on site-level interventions that either fail to acknowledge or attempt to navigate broader spatiotemporal dynamics, the failure of many projects to establish or engage with existing multi-stakeholder platforms (or similar negotiating spaces), a lack of adequate inclusion of community-level or traditionally marginalized actors in project design or implementation, misalignment of project objectives with local needs, a lack of cross-project communication, and the production and fragmentation of project outputs, for example, land-use plans that have little or no local ownership or are often abandoned after project closure.

Staff from a local university suggested that support from a neutral brokering organization or actor from an NGO or academia, capable of mobilizing relevant stakeholder groups and convening and facilitating multi-stakeholder platforms (MSPs), would help address some coordination challenges. The first workshop extensively discussed the qualities and capabilities such facilitators should have: be trusted by most stakeholders, understand landscape issues, and be capable of raising funds and reaching and engaging actors across multiple sectors and scales, including community-level and district-level authorities, national policymakers, and private-sector entities that link and potentially transcend such scales. Such a bridging organization should preferably also have a presence in relevant national and international policy negotiations or regulatory bodies such as UN conventions, the Global Shea Alliance, and the Food and Drugs Authority. A minimum institutional capacity would be required as well, including technical expertise, financial capacity, and sufficient staff. The breakout groups did not generate a uniform picture of which organizations would be most suited for this role, but research organizations and NGOs were the most mentioned. Additional consultation spaces such as community durbars and Regional Coordinating Council meetings should be convened, with decisions and recommendations feeding into a more centralized WWC decision-making platform that should periodically review how the management and maintenance of the WWC are proceeding. Table 3 lists additional proposed solutions to improve coordination.

3.3.5. Weak local capacity

All stakeholder groups consistently identified weak local capacity to sustainably manage natural resources, adapt to climate change, or improve livelihoods as a barrier. However, weak capacity encompasses various issues. For example, an FC representative highlighted the inadequate capacity of public governance institutions and local committees to implement policies at local levels. NGO staff pointed out limited knowledge and enforcement capacity among CREMA members and executives regarding laws and policies on forests, wildlife, rivers,

and watersheds determined by the national government. A traditional chief noted ineffective bylaws at the assembly level, leading to resource exploitation. Traditional authorities, CREMA community members, and the private sector highlighted technical capacity gaps, notably regarding sustainable farming, forest restoration, tree planting, and developing appropriate monitoring systems. Finally, multiple respondents noted the poor local capacity to mobilize resources, coordinate different stakeholder groups, generate funding, and equitably share resources and benefits from natural resource use and management.

Participants' recommendations included training on sustainable natural resource management, agricultural practices, and environmental monitoring tools by the EPA; more opportunities for Fulani people to attend workshops and decision-making spaces, including training on how to effectively engage in such spaces; strengthening existing CREMA structures; and enhancing the capacity of CREMA executives in resource mobilization, value chain development, and legal and policy literacy. Various stakeholder groups emphasized the need for improved advocating citizen science approaches in collaboration with research organizations to encompass biophysical, socioeconomic, and cultural attributes (Table 3).

3.4. Establishing common long-term objectives

After extensive discussion, the groups agreed on the three key long-term objectives for the WWC (Step 5 of Fig. 2): strengthening governance capacity, promoting environmentally friendly agricultural practices, and bolstering landscape resilience and multifunctionality. Despite overlaps in goals and means to achieve them, it was deemed essential to achieve these long-term objectives to realize the shared vision statement. The group then collaborated to draft a comprehensive list of actions and activities, forming pathways toward achieving each main objective. Below, we elaborate on some key discussion points for each long-term objective.

3.4.1. Strengthening governance capacity

There was strong support for a more inclusive and coherent governance framework to improve coordination among stakeholders with an interest in the WWC. Emphasis was placed on broadening participation and influence in decision-making processes to ensure a fair distribution of resources, costs, and benefits from natural resource use and management. Participants recognized the complexity of the current system and stressed the need to address both horizontal and vertical decision-making structures. Efforts to improve environmental governance should aim to reconcile competing stakeholder interests as well as project and NGO objectives.

Related issues of concern are the need for equitable benefit-sharing mechanisms and alignment between legal provisions and reality. For example, despite clear legal provisions for the division of stumpages (see Box 1), participants suggested that, in practice, up to 90 % of natural resource extraction is illegal, depriving local communities of benefits. Meanwhile, for the few legal operations, stumpage fees often take a long time to reach the local level through institutions such as the FC, Office of the Administration of Stool Lands, and District Assemblies. A recurring suggestion to strengthen governance was to involve chiefs more actively in natural resource decision-making and to ensure the attendance of representatives from agencies like the Forestry Commission and Environmental Protection Agency at Regional House of Chiefs meetings to facilitate negotiation and achieve a common understanding.

Box 1

The legal provision for the division of stumpages.

“The Forestry Commission (FC) and landowners are entitled to stumpage fees (royalties). The amount accruing to the FC to compensate it for forest management and timber regulations is not enshrined in law but, in practice, 50% (Client Earth 2013). The Constitution determines that 10% of the remainder goes to the Office of Administration of Stool Lands to cover administrative expenses and 90% to the Stool (25%), traditional authorities (Chief)- (20%) and District Assembly (55%). In the case of private land ownership, 100% of the contract area rent goes to the landowner.”

Source: Ros-Tonen and Derkyi, 2018, Appendix 2, compiled from the Constitution 267 (2) (b) and (6), the Timber Resources Management Act, 1997, Act 547, section 8; and the Timber Resources Management Act 1997LI 1649 (as amended by LI 1696 and LI 1721).

3.4.2. Increasing adoption of environmentally friendly agricultural practices

This objective was closely tied to the necessity of enhancing the capacity of farmers and natural resource managers. Without adequate skills, increasing the adoption of environmentally friendly agricultural practices would likely fail. Participants explored ways to better engage local communities in initiatives promoting practices such as assisted and farmer-managed natural regeneration (ANR and FMNR). In a key informant interview, a chief emphasized the value of incorporating local knowledge and practices into efforts to promote sustainable farming.

It was emphasized that empowering community members and farmers to participate in decision-making and project design is crucial for understanding their capacities and needs and long-term project sustainability. Additionally, it was noted that while incentives are helpful in the short term, they often fall short in the long term. Future efforts should, therefore, allocate more time and resources to training and capacity building on appropriate farming methods, adopting good practices, and sustainably managing natural resources. Such training should occur at the CREMA level and include awareness-raising, highlighting the long-term benefits of sustainable NRM and implementing appropriate sanctions for violators.

3.4.3. Enhancing resilience and multifunctionality

Participants stressed the need for a comprehensive approach addressing both biophysical and social aspects in achieving long-term objectives. This involves co-developing a landscape sustainability management plan clarifying resources, land users, frictions, and trade-offs as a basis for discussing the desired landscape and negotiating trade-offs. The plan can clarify how much of the landscape can be committed to each land use. Stakeholders would have to compromise, facilitated by power brokers and bridging actors like academics and NGOs, with conflict resolution mechanisms playing a vital role.

Workshop discussions (see Appendix D) and interviews revealed that government actors, the private sector, and academics considered the restoration of degraded landscapes crucial for enhancing resilience and multi-functionality. An FC staff member acknowledged the importance of distinguishing between “artificial” planting and natural regeneration, as well as “tending”, as planted trees need to be cared for to survive. The challenges associated with tree planting in northern Ghana require an emphasis on tree growing over mere planting, with natural regeneration as the preferred option. Government officials emphasized the importance of providing alternative livelihood options alongside restoration efforts (see Appendix D). However, other participants cautioned against viewing beekeeping as a viable alternative to activities like illegal

mining or hunting. Instead, they suggested focusing on educating hunters in sustainable practices and ensuring that alternative livelihood provision aligns with local needs while also strengthening community enterprise and market access.

3.5. Co-developed pathways of change

In a theory of change (ToC), pathways of change (PoC) represent the specific types of actions, activities, or interventions needed to achieve a shared vision, such as for the WWC. To co-develop these pathways (Step 6 of Fig. 2), ToC workshop participants discussed the established long-term objectives (see 3.4) and prioritized the actions from the stakeholder-specific discussions (see Appendix D) for these outcomes to be realized (see Fig. 5). It was agreed that these proposed activities and goals would then be reviewed by the research team and transformed into a preliminary theory of change model for the WWC (Step 7 of Fig. 2), which remains provisional until broader stakeholder consultation (Step 8 of Fig. 2). These consultations will be done by COLANDS researchers engaging community level, private sector, and government actors who were unable to attend the ToC process through surveys, interviews, and focus group discussions with actors. Feedback from these consultations will inform the final ToC and contribute to the design of a sustainable landscape management plan (Step 9 of Fig. 2).

Extended consultation proved crucial after comparing stakeholder-specific goals and activities with the collectively developed pathway of change (see Appendix E). The comparison reveals that government actors dominate discussions, with their defined goals forming the core outcomes in the PoC, and all corresponding activities were included either directly or indirectly. Grassroots empowerment (proposed by academics) and women’s rights sensitization (suggested by NGOs) are notably absent from the consensus view. Monitoring and evaluation, flagged as necessary by the NGO/private sector group and traditional authorities, are also missing. Law enforcement, which was intensively discussed during the ToC workshop and identified as a priority action by academics, is notably absent. Furthermore, half of the proposed activities by CREMA executives (see Appendices D and E) are excluded from the PoC, raising questions about their influence on the final plan’s content.

Several actions in the PoC emerged during the plenary discussion without apparent link to the discussions in stakeholder groups (marked with an asterisk in Fig. 5). It remains unclear which stakeholder groups brought these activities to the fore and had the most influence on their inclusion in the PoC.



Fig. 5. The commonly conceived long-term vision for the future of the WWC with associated objectives and contributing activities (pathways of change). *Statements marked with an asterisk were unrelated to the discussion in stakeholder groups, suggesting that discussions further evolved during this exercise and new points were put on the sticky notes that formed the basis of this diagram. Source: Developed during workshop discussions on 15 September 2022.

4. Discussion

4.1. Historical legacies and inefficiencies have led to degradation and disillusionment in the WWC

Across the engagement processes, various stakeholder groups had a clear sense of disillusionment. For example, some CREMA representatives expressed frustration with the government’s inability to identify, sanction, or curtail illegal mining operators in the WWC landscape while their own livelihood needs are inadequately considered. The Fulani head was also critical of the government’s role in failing to prevent the ongoing marginalization of pastoralists, which has left them disempowered and disenfranchised. Finally, the traditional chiefs felt they no longer had the authority to meaningfully intervene in environmental decision-making and governance. How local people perceive their own and the state’s role in landscape management is important as

perceptions influence subsequent behavior (Carmenta et al., 2017). Furthermore, resource governance must be considered in the context of state-building and later decentralization processes and how these have affected institutional change, property and access rights, and power dynamics (Haller and Merten, 2008; Wardell and Lund, 2006). Such a confluence of disillusionment across stakeholders in the WWC has led to agro-pastoralist conflicts (Bayala et al., 2023b), contributed toward extensive degradation (Bayala et al., 2023a), and created significant challenges for future restoration efforts (Erbaugh et al., 2020; Sandbrook et al., 2023).

While government officials naturally defended their role and highlighted the existence of appropriate land planning agencies and laws, community-level actors accused the government of inaction, failing to enforce environmental laws, insufficiently raising awareness at the community level of national policy decisions, and inadequately supporting or strengthening local institutions. It has previously been

suggested that a rhetorical commitment to decentralization might exist in post-colonial Ghana, with questions raised over whether the state has dismantled local institutions while failing to provide fiscal decentralization or adequate alternatives (Haller and Merten, 2008; Resnick, 2017; Wardell and Lund, 2006). This remains debatable, but what is clear from the discussions, and particularly the identification of barriers to change and potential solutions, is that environmental degradation and social disillusionment have been influenced by issues of power, conflict, and historical (and contemporary) injustices and processes of institution building (Gadsden et al., 2023; Grove et al., 2018). The state's involvement was crucial, and stakeholders aimed to clarify the role and level of government participation in the future and how government agencies can best support efforts to address environmental degradation and improve landscape resilience and sustainability within the WWC.

4.2. Common concern entry points toward a shared vision

There was broad agreement that the current social-ecological conditions of the WWC are both undesirable and unsustainable, while current governance structures are inadequately equipped to address the current constraining factors. Of particular concern, stakeholders agreed that the current rate of natural resource exploitation and agricultural expansion urgently needed to be addressed. Establishing common concerns is essential for harmonizing stakeholder objectives and realizing transformational landscape change (Besseau et al., 2018; Sayer et al., 2013; Vermunt et al., 2020). The results showed that once stakeholders were able to agree on the issues of most common concern in the WWC, this provided the stimulus to enable them to reflect on the historical events that led to the present situation and collectively develop and agree upon a shared vision for the landscape.

Despite the consensus achieved on both the issues of current concern and future vision, the evidence of several persistent barriers obstructing the realization of a landscape transformation cannot be overstated. Furthermore, we showed that some of these barriers overlap and are likely reinforcing (Adeyanju et al., 2021). While it is encouraging that participants were able to propose some solutions to overcome these barriers, it is likely that any innovative solutions should also be accompanied by processes to deconstruct or unmake existing problematic socioecological structures (Feola et al., 2021), including addressing existing power asymmetries that prevent inclusive and equitable governance (Adeyanju et al., 2021; Bastos Lima and Persson, 2020; Siangulube et al., 2023; Vallet et al., 2020) (see sub-section below). Therefore, future efforts at reconciling conservation and development, restoration, or sustainable transformation should be collaboratively developed to address inherent technical challenges and help overcome the more discrete, often insidious socio-political issues that influence social-ecological outcomes. Doing so can help to ensure that interventions are culturally appropriate and have the desired impacts on local communities.

4.3. Opportunities for inclusive and equitable governance in the WWC

As the previous sub-sections have highlighted, the evolution of the WWC has been, and continues to be, punctuated by the conflicting objectives of actors operating across different sectors and scales of influence. Nevertheless, our findings showed there is now considerable enthusiasm to move toward more sustainable and inclusive governance of a multifunctional landscape that conserves biodiversity in a productive system that delivers local livelihood opportunities. This enthusiasm is clearly reflected both in the shared vision for the landscape and the mid-to-long-term objectives of the sector-specific groups that all point toward a desire for more inclusive and equitable governance structures (Figs. 4 and 5). Such a desire aligns well with the increasingly commonly held notion that environmental policy goals are more likely to be achieved via more inclusive governance that engages actors across scales (Agrawal and Ostrom, 2007; Lockwood et al., 2010; Morrison et al.,

2019; Reed et al., 2016; Wyborn, 2015), despite empirical evidence of the links between such governance and performance being somewhat lacking (Bennett and Satterfield, 2018; Bodin, 2017).

Regardless of whether inclusive governance more effectively delivers social-ecological outcomes, achieving collective action and managing cross-scale dynamics is notoriously challenging (Adger et al., 2005; Cash et al., 2006; Wyborn, 2015). However, a shared commitment to more inclusive and equitable governance that focuses on particular shared problems appears to represent a significant opportunity for the future management of the WWC. Indeed, our results suggest that the reformation of governance could synergistically overcome multiple current barriers to landscape transformation. For example, strengthening governance responds to conflicted objectives, poor stakeholder coordination, and issues of corruption. It can, therefore, be questioned whether the placing of strengthened governance as a long-term objective (Fig. 5) is misplaced and perhaps is better positioned as an urgent near-term endeavor. Regardless, efforts to reform governance within the WWC and ensure that inclusion and equity are viable outcomes must be accompanied by a commitment to establish clear rights and clarify (and enforce) land-use regulations. Furthermore, effort should be made to raise local awareness and enhance the clarity of land-use policy (Fig. 5). Previous research has already highlighted how land-use policy in Ghana can be misaligned and contradictory with restoration objectives pitted against demands for agricultural expansion (Acheampong et al., 2019). Our results confirm these concerns with participants from across groups emphasizing the need for a more cohesive land-use policy and a more integrated system approach to landscape governance that considers broader dynamics (Bürgi et al., 2017; Djenontin et al., 2018; Reed et al., 2020a; Ros-Tonen et al., 2014; Scherr et al., 2012; van Oosten et al., 2014).

4.4. Realizing vision requires capacity development, sustainable financing, and monitoring systems

Weak local capacity, poor coordination, actor marginalization, and access to resources are overlapping issues. For example, marginalization can be influenced by numerous factors and occur in multiple ways, i.e., social, economic, or political marginalization. Actors might be increasingly marginalized by not being invited to decision-making (representational injustice) or being unable to actively and meaningfully engage even if invited (procedural injustice) (Schlosberg, 2007). Marginalized actors can also be reluctant to engage in decision-making due to a variety of reasons, for example, illiteracy, feelings of inadequacy, lack of access to information, knowledge, or legislation, inability to travel, and the opportunity cost to engage—causing self-exclusion (Adams et al., 2018; Skidmore et al., 2006). Meanwhile, a lack of funding to educate or sensitize on conservation measures and sustainable natural resource use can manifest as a coordination issue, can also perpetuate weak local capacity, and it could even be claimed that it could serve to further obstruct the reconciliation of stakeholder objectives. An investment in strengthening local capacity could, therefore, potentially help to overcome multiple barriers. Building capacity must encompass relevant training in regenerative agricultural practices and sustainable NRM but also more typically overlooked skills such as proficiency in policy literacy and the ability to engage in multi-stakeholder land-use planning and negotiations (Blomley and Walters, 2019; Kusters et al., 2020, 2018; van Oosten et al., 2021).

Doing so can support the desire to develop a mutually agreed sustainable land-use management plan with accompanying participatory monitoring systems that utilize local knowledge (Ban et al., 2018; Sayer et al., 2017; Williams et al., 2020; Yanou et al., 2023) and help to formulate the configuration of appropriate multi-stakeholder platforms to steer the governance of the WWC (Kusters et al., 2018; Sarmiento Barletti et al., 2020; Siangulube, 2023). There was an acknowledgement that such multi-stakeholder platforms must engender local ownership, particularly at the CREMA level, encourage knowledge exchange, shared

learning, and collective action, but also strengthen vertical and horizontal decision-making scales. Engaging with boundary partners who are able to bridge local-(inter)national policy arenas and research-practice gaps will likely support such endeavours (Deans et al., 2018; Reed et al., 2020a; Riggs et al., 2018; Ros-Tonen et al., 2018, 2014). However, establishing and maintaining such structures requires financial and technical investment and social capital (Davies et al. 2018; Kusters et al. 2018; Angelstam et al. 2021; Chazdon et al. 2021; Ratner et al. 2022). Indeed, the MSP process described here has been largely dependent on COLANDS support (financial, technical, and as the main brokering partner capable of mobilizing stakeholders), which, as a donor-funded initiative, is unable to provide any guarantee of long-term presence. With an economy in crisis (<https://www.bbc.co.uk/news/world-africa-65622715>) and dwindling donor funding for the WWC, innovative and sustainable funding mechanisms are urgently required. There appears to be support for identifying and exploring opportunities for collaboration between CREMAs and for-profit entities and pursuing conventional income-generating initiatives such as PES and ecotourism (Table 2).

Meanwhile, the concept of conservation basic income that unconditionally provides finances for environmental stewardship has gained recent momentum (de Lange et al., 2023; Fletcher and Büscher, 2020), although the potential for perverse outcomes from such an initiative appears relatively high (Kedward et al., 2022; Kerr et al., 2014). The proposed solutions in Table 3 suggest that the demand for conservation basic services (i.e., the provision of capacity building, education/awareness-raising, agricultural training, mechanisms for stakeholder engagement, etc.) might be greater than the demand for cash income. Joint long-term ventures between public, private, and third-sector organizations (including donor agencies) might hold the potential for developing such innovative mechanisms. Such ventures should seek to capitalize on the willingness and commitment to change displayed by the stakeholder groups engaged in the ToC process and strengthen existing relations with government and university partners who could respectively provide in-kind support towards landscape planning, restoration, and monitoring.

5. Study limitations

As with most attempts at stakeholder engagement, particularly those related to large landscapes, the issue of representation is crucial (Kusters et al., 2018; Martin et al., 2016; Ratner et al., 2022; Reed et al., 2019), which was also the case with our experience. Despite being mindful of the need to ensure broad stakeholder representation that spanned local to national level actors and crossed multiple sectors (Bayala et al., 2023a) and being alert to gender and power dynamics (Kristjanson et al. 2019; Reed et al. 2019; Siangulube et al. 2023), we, nonetheless, could have done better. Similar to a previous study (Reed et al. 2022), there was limited private sector engagement, with those in attendance representing very specific value chains that could be described as relatively pro-environment and, therefore, strongly influenced their recommendations for what should happen in the landscape. Meanwhile, although there was representation from the Fulani community, it was in the form of the pastoralist chief, again leaving question marks related to the adequacy of representation. Finally, the gender balance among the participants was heavily skewed in favor of males, and of those few women who did attend, only one made any significant vocal contribution to the discussions, lending weight to the idea that attendance in environmental governance is a grossly insufficient proxy for engagement (German et al., 2007). We concede that it is near impossible to get everybody around the table, but we are attempting to address these limitations with an ongoing study that seeks to validate the working theory of change model by sharing the findings with a broader stakeholder group that will include community members, Fulani pastoralists, private sector actors, and policy and land-use decision makers. Finally, perhaps not a limitation but more of a consideration for future stakeholder engagement

processes, we remain uncertain about the role and significance of facilitation in such processes. Whereas we previously had trained project or partner staff members to perform facilitation, we recruited an independent and impartial local facilitator for this process. While the facilitator performed excellently in the primary role of facilitation, encouraging active participation and bringing stakeholders toward a point of convergence, the level of impartiality was questionable given their previous experience working in both government and the private sector and their intimate knowledge of the area—all of which could be perceived to be either an advantage or disadvantage depending on your position, objectives, and what you expect to gain, lose, or achieve from the engagement process; central issues of consideration for any social-ecological stakeholder process that strives for inclusivity and equitability.

6. Conclusion

The Western Wildlife Corridor landscape has been shaped by conflicting stakeholder objectives prioritizing either the need to conserve land for biodiversity or enhance the productive use of land for livelihood needs and economic activities. These conflicting objectives, broader political-economic dynamics, and stochastic environmental changes like unpredictable rainfall patterns, increasingly aggravated by the impacts of climate change, have resulted in a complex social-ecological system that has been recently characterized by human-wildlife and agropastoralist conflict, extensive degradation, and local disillusionment with governance actors. To better understand NRM and associated environmental degradation in the WWC and reconcile international environmental targets with local socio-cultural demands, stakeholders engaged in a series of workshops and interviews to identify common concerns, negotiate objectives, and collaboratively develop a shared vision.

These engagement processes enabled stakeholders to reflect on their contributions and the historical and contemporary challenges obstructing landscape resilience and sustainability. Despite the contested nature of land and natural resource use, stakeholders were able to agree on specific issues of common concern and an idealized shared vision of a future landscape. Moreover, sector-specific discussions and group negotiations helped formulate concrete short-, mid-, and long-term objectives and specific actions, interventions, and a suite of potential solutions to current barriers that combined could help to reorient and transform the governance and management of the WWC. These recommendations enabled us to generate a working theory of change for the WWC landscape that will be shared and validated with a broader group of stakeholders, including those not present at the workshops.

We expect that the theory of change model and recommendations within can inform the development of a sustainable landscape management plan and future evidence-based policy. However, we acknowledge that further research is required to assess whether the theory of change is supported by a broader and more representative WWC stakeholder group. Because of the consensus-oriented nature of ToC workshops, further research should also reveal and make stakeholders aware of persistent differences of interests and power that may hinder the implementation of a ToC.

Finally, this study shows that the methods for inclusive engagement in environmental decision-making are extrapolatable to other contexts. Therefore, we expect these methods to hold value for other landscapes faced with similar social-environmental challenges, providing implementers account for socio-cultural differences and sensitivities. Indeed, we strongly recommend that a collaborative ToC process be a vital component of integrated landscape approach initiatives as doing so can help overcome land-use contestations and ensure proposed interventions are locally demanded while also contributing to national commitments (Reed et al., 2015) and equitably distributed roles and benefits.

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CRedit authorship contribution statement

James Reed: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Visualization, Writing – original draft, Writing – review & editing. **Mirjam A.F. Ros-Tonen:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing – original draft, Writing – review & editing. **Samuel Adeyanju:** Investigation, Writing – review & editing. **Abdul Wahid Arimiyaw:** Investigation, Writing – review & editing. **Kwabena Asubonteng:** Investigation, Validation, Writing – review & editing. **Bernard N. Baatuwile:** Validation, Writing – review & editing. **Eric R.C. Bayala:** Investigation, Validation, Writing – review & editing. **Damian Tom-Dery:** Writing – review & editing. **Amy Ickowitz:** Writing – review & editing. **Yakubu B. Issaka:** Writing – review & editing. **Kaala B. Moombe:** Investigation, Writing – review & editing. **Joseph Mumuni:** Investigation, Writing – review & editing. **George Wakesho:** Methodology, Writing – review & editing. **Mathurin Zida:** Investigation, Writing – review & editing. **Terry Sunderland:** Funding acquisition, Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Anonymized data will be made available upon request

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Appendix A. Supplementary data

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