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Policy coherence and collisions in multifunctional landscapes in Zimbabwe

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Contents

Summary

This report assesses policy coherence and collisions, understood here as areas where policies pull in different directions, across Zimbabwe's national policies and strategies. The analysis is in relation to five salient elements of multifunctional landscapes (MFLs): improving livelihoods, environmental sustainability, multifunctionality, stakeholder engagement and social inclusion, and the enabling environment. It also examines how these frameworks enable or constrain the transition toward MFLs. MFLs provide an integrated approach to managing land, water and ecosystems to deliver multiple interconnected benefits such as resilient food systems, ecological sustainability, improved livelihoods and inclusive development. The assessment combines a quantitative analysis of policy documents, examining the frequency and distribution of references to the key MFL elements, with a qualitative review of how these priorities are reflected in policy design, institutional roles, and implementation. The two approaches are reinforcing. The quantitative analysis allows us to quantify the extent of policy coherence of collisions while the qualitative analysis helps to explain why the findings. A total of 26 national policy frameworks were reviewed across the two analytical approaches, and this was complemented by a district-level validation workshop in Mbire to assess how policy coherence and collision play out in practice.

The findings show that Zimbabwe's policy landscape provides a strong foundation for promoting MFLs, while also revealing a policy system that is ambitious but uneven across sectors and scales. While national policies articulate broad commitments to sustainability, livelihoods, and development, these priorities are not consistently integrated across sectors nor translated into coordinated implementation pathways, resulting in fragmented outcomes on the ground.

The quantitative analysis shows that most policies place stronger emphasis on environmental sustainability and improving livelihoods, while much less attention is given to creating the institutional conditions necessary for coordinated action. Although multifunctionality is mentioned in several policies, it is seldom reflected in concrete or integrated approaches to managing landscapes. The qualitative review helps explain this pattern, showing that references to multifunctionality are often broad or aspirational and are rarely translated into institutional arrangements or integrated planning mechanisms. Similarly, provisions related to coordination, institutional roles, and accountability are uneven across sectoral policies, resulting in a weakly articulated enabling environment. Together, these findings clarify that the central challenge lies not in the absence of policy intent, but in uneven integration and limited translation of stated priorities into implementation.

Policy collisions are most evident at the agriculture and water interface, and in related climate and environment interactions, where objectives related to food production and economic growth frequently conflict with ecological safeguards. Policies promoting irrigation expansion and agricultural intensification are not consistently aligned with measures to protect catchments, regulate groundwater abstraction, or sustain ecosystem services. Evidence from the Mbire validation workshop reinforced these findings, highlighting how water availability and management often determine whether agricultural, environmental, and livelihood objectives can be achieved simultaneously in practice.

The enabling environment for coordinated MFL implementation remains fragmented. Although high-level frameworks such as the Vision 2030 and the National Development Strategy 1 (NDS1, 2021-2025) articulate commitments to institutional coordination and governance reform, these are unevenly applied across sectors and levels of governance, limiting system-wide harmonization and coordinated implementation. In practice, overlapping and sometimes competing mandates among institutions such as the Environmental Management Agency (EMA), established under the Environmental Management Act (EM Act), the Zimbabwe National Water Authority (ZINWA) guided by Zimbabwe's National Water Policy (ZNWP, 2012), the Forestry Commission (FC), and the Zimbabwe

Parks and Wildlife Management Authority (ZPWMA) established through the Parks and Wildlife Act (PWA) weaken implementation, create duplication, and blur accountability.

Insights from the Mbire validation workshop further demonstrate that institutional overlaps and coordination gaps are not merely bureaucratic but have tangible effects on livelihoods and resource management. Participants affirmed that these dynamics reflect lived realities in which national policies translate into daily struggles to balance food production, conservation, and survival. Farmers explained that cultivating along riverbanks is often a coping strategy in periods of insufficient rainfall, illustrating how policies intended to protect ecosystems can inadvertently constrain food security in water-scarce areas. Human-wildlife conflict also emerged as a persistent challenge affecting both safety and livelihoods, underscoring the need for greater awareness, collaboration, and shared responsibility rather than reliance on punitive enforcement.

Overall, Zimbabwe's policy landscape reflects partial alignment rather than full coherence. While a strong strategic foundation for advancing MFLs exists, sectoral silos, limited water security, and insufficient integration of inclusion, land sharing approaches, and multifunctionality continue to constrain the translation of policy ambition into coordinated implementation. Addressing these challenges will require reinforcing vertical and horizontal alignment across sectors and levels of government, resolving key policy collisions in agriculture and water, and embedding inclusive, MFL approaches at the center of national and local planning processes.

Key Recommendations

- Improve policy coherence at national and sub-national levels by aligning agriculture, water, climate, and development strategies to ensure consistency across sectors and levels of governance.

- Identify priority areas for policy reform and harmonization by addressing contradictions that undermine sustainability, livelihoods, and ecosystem integrity.

- Confront policy collisions by embedding sustainability as a guiding principle and integrating multifunctionality and social inclusion more explicitly across all policy domains.

- Strengthen cross-ministerial coordination and harmonize monitoring systems to track coherence in implementation, not only in policy design.

- Reinforce local dialogue and learning platforms to ensure meaningful participation, collaborative learning, accountability, and local ownership by empowering community forums, traditional leaders, farmer organizations, women, and youth to set priorities, monitor progress, and shape implementation in national and sub-national policy processes.

- Promote awareness and collaboration between government agencies and communities so that environmental and water regulations are understood and implemented through shared responsibility rather than punitive enforcement.

- Leverage climate and environment frameworks as anchors for broader policy alignment, positioning MFL transformation as part of Zimbabwe's long-term pathway toward resilience and inclusive development.

Shifting from aspiration to action will require connecting Zimbabwe's strong policy foundations with consistent attention to multifunctionality, inclusion, and coordination. The Mbire validation workshop provided evidence that

communities, local authorities, and technical departments are ready to collaborate when policies are coherent and adequately resourced. Prioritizing these actions will enable Zimbabwe to advance MFLs that deliver food security, ecological resilience, and inclusive development in line with national and global commitments.

Acronyms and Abbreviations

ARDAS	Agricultural and Rural Development Advisory Services
CAMPFIRE	Communal Areas Management Program for Indigenous Resources
CGIAR	Consortium of International Agricultural Research Centers
CIMMYT	International Maize and Wheat Improvement Center
DTM	Document-Term Matrix
EMA	Environmental Management Agency
FC	Forestry Commission
GIS	Geographic Information System
ICC	Intraclass Correlation Coefficient
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IWMI	International Water Management Institute
KTD	Kendall Tau Distance
MLAFWRD	Ministry of Lands, Agriculture, Fisheries, Water and Rural Development
MRDC	Mbire Rural District Council
MWACSMED	Ministry of Women Affairs, Community, Small and Medium Enterprises Development
MFL	Multifunctional Landscapes
NLP	Natural Language Processing
OCR	Optical Character Recognition
OECD	Organization for Economic Co-operation and Development
R	R Statistical Computing Environment (v4.4.1)
SDGs	Sustainable Development Goals
VBUs	Village Business Units
VIDCO	Village Development Committee
W	Kendall's Coefficient of Concordance
WADCO	Ward Development Committee
ZINWA	Zimbabwe National Water Authority
ZPWMA	Zimbabwe Parks and Wildlife Management Authority
α (Alpha)	Krippendorff's Alpha
τ (Tau)	Kendall's Tau (rank correlation measure)

1. Introduction

Zimbabwe faces a polycrisis marked by the intersecting pressures of an expanding agrarian frontier, accelerating environmental degradation, including deforestation, biodiversity loss, and soil erosion, and increasing climate risks such as recurrent droughts and rising temperatures, all of which challenge the country's capacity to sustain its growing population (De Waal and Ilieva, 2024). The country's development agenda, outlined in the Vision 2030 and related strategies, depends heavily on agriculture, water, and natural resources, sectors that are acutely vulnerable to these converging crises. This vulnerability is explicitly acknowledged in the National Climate Policy (ZNCP, 2017) and the Zimbabwe's Revised Nationally Determined Contribution (ZRNDC, 2021). However, weak policy coherence, limited cross-sectoral coordination, and fragmented institutional responses have constrained the country's ability to effectively manage these interlinked challenges. Addressing these challenges requires a move away from fragmented sectoral approaches towards integrated and sustainable land and resource management.

To understand what this transition entails, this report applies a MFLs' analytical lens to examine the patterns of policy coherence and collisions across land-use, agriculture, water, and environmental sectors. It assesses Zimbabwe's policy environment for land use and natural resources, identifying synergies and collisions that influence progress toward MFLs. The analysis is part of the CGIAR Multifunctional Landscapes Program, Area of Work 4 (Institutions and Policies), which addresses institutional frameworks and policy options for sustainable landscape governance.

The specific objectives of this report are:

- To clarify the concept of MFLs and their relevance to Zimbabwe's national development priorities,
- To assess the alignment of national policies with MFL elements,
- To identify policy synergies and collisions that shape landscape governance,
- To recommend strategies for strengthening coherence, inclusivity, and institutional alignment.

1.1. Concept of MFL and Relevance to Zimbabwe

According to the CGIAR Multifunctional Landscapes Program design document, MFLs are systems where land, water, biodiversity and related resources are managed together to generate multiple benefits, rather than through fragmented sectoral approaches. In practice, this means managing resources in an integrated way to deliver multiple benefits simultaneously, recognizing that production, conservation and livelihoods are interdependent and must be balanced within the same space. The overarching aim of the MFL approach is to accelerate agroecological transitions by promoting nature-positive and regenerative solutions that enhance ecosystem resilience, improve productivity, and support equitable livelihoods.

In Zimbabwe, MFLs are understood as integrating three closely linked functions:

- **Production functions** sustain food, fibre, and fuel, providing the basis for food security and economic growth, as outlined in the country's National Agriculture Policy Framework (ZNAPF, 2019-2030).
- **Ecological functions** conserve biodiversity, enhance soil and water health, and contribute to carbon sequestration, thereby strengthening resilience, consistent with the National Biodiversity Strategy and Action Plan (NBSAP, 2014) and Zimbabwe's National Environmental Policy and Strategies (ZNEP, 2009).
- **Socio-cultural functions** support livelihoods, safeguard cultural heritage, promote equitable access to resources, and contribute to social cohesion, conflict mitigation, and stability, particularly in contexts where competition over land, water, and wildlife affects safety and well-being. This aligns with the Constitution of

Zimbabwe (CoZ, 2013), the NDS1 (2021-2025), the National Gender Policy (NGP, 2013-2017), and the Parks and Wildlife Act (PWA, 1975).

These functions embody the essence of multifunctionality, where productive, ecological, and social outcomes are pursued in tandem rather than in isolation. This framing positions MFLs as a bridge between global sustainability principles and national and sub-national development priorities, offering a coherent framework through which Zimbabwe can reconcile growth objectives with environmental stewardship and social inclusion. In this way, MFLs are not an abstract construct but a practical framework for achieving national goals. Vision 2030 and the NDS1 (2021-2025) emphasize prosperity, resilience, and inclusive growth, all of which depend on landscapes that deliver production, ecological, and socio-cultural functions simultaneously. Zimbabwe's commitments under the Sustainable Development Goals (SDGs) reinforce this integration, with specific links to food systems (SDG 2), water security (SDG 6), climate action (SDG 13), and biodiversity conservation (SDG 15), as set out in the National Climate Change Learning Strategy (NCCLS, 2020-2030) and Zimbabwe's NDC (2021). The MFL approach thus illustrates how national development can be grounded in resilient, productive, and inclusive landscapes.

1.2. Rationale for Policy Coherence and Collisions

The success of any transition towards MFLs depends on the extent of policy coherence across sectors. When policies are aligned in objectives and instruments, they systematically reduce conflicts and promote synergies (Nilsson et al., 2012). Such coherence accelerates progress towards sustainability, resilience, and inclusive development by enabling integrated governance and cross-sectoral collaboration (Fopa Tchinda and Talbot, 2024). The purpose of assessing policy coherence is to illustrate how policies interact, highlight synergies and conflicts, and inform better policymaking (Nilsson and Weitz, 2019; Blicharska et al., 2024). The Global Assessment Report on Biodiversity and Ecosystem Services by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES, 2019a) notes that full policy coherence is rarely achieved. Analyzing policy interactions is therefore important for identifying leverage points and guiding improvements in landscape governance (Öhman and Karlsson, 2025).

While policy synergies create enabling conditions for MFLs, contradictions within the policy environment generate significant barriers. Conflicts emerge when economic, social, or environmental goals are pursued in isolation, leading to contradictory mandates, collisions, fragmented governance, and implementation gaps. These challenges are often reinforced by weak political will, limited coordination, and inadequate institutional capacity (Gottenhuber et al., 2023). As Öhman and Karlsson (2025) demonstrate, conflicts that are horizontal, vertical, internal, or external undermine the alignment of objectives, instruments, and implementation. Scholars also emphasize that contradictory policies act as barriers to transformation and undermine integrated governance (Howard, 2004; Reed et al., 2017; Sandström et al., 2020; van Oosten, 2021; Fopa Tchinda and Talbot, 2024).

Collisions also create inefficiency and waste resources. Where policies pull in different directions, programs become divided, duplicative, or counterproductive, leading to lost opportunities for co-benefits (Nilsson et al., 2012). Stakeholder confusion and resistance often arise when communities and investors receive mixed signals from government institutions, weakening trust and delaying implementation and undermining socio-economic progress.

In Zimbabwe, short-term incentives create some of the sharpest collisions. The Horticulture Recovery and Growth Plan (HRGP, 2020) encourages expansion into wetlands, which conflicts with the National Wetlands Policy (NWP, 2022). Similarly, irrigation expansion policies prioritize agricultural output but disregard ecological flows, eroding long-term resilience. These contradictions are compounded by institutional silos, where ministries pursue divergent mandates and fail to collaborate effectively, weakening landscape governance (IPBES, 2019b; Gottenhuber et al.,

2023). However, the extent of policy coherence or collisions in the context of MFLs have not been systematically assessed in Zimbabwe.

Recognizing this gap, this report applies quantitative discourse analysis using Natural Language Processing (NLP) and qualitative scoring to systematically evaluate the extent to which Zimbabwean policy documents demonstrate coherence or collision. The analysis is done in relation to five key MFL elements: environmental sustainability, enabling environment, multifunctionality, improving livelihoods, stakeholder engagement and social inclusion. These MFL elements are defined and explained in detail in Chapter Two.

While the focus is on national-level policy frameworks, the analysis also considers implications for sub-national governance under Zimbabwe's decentralization agenda, which places increasing responsibility on provincial and local authorities to create enabling conditions for inclusive and effective implementation.

The analysis is structured around four guiding questions:

1. How do Zimbabwe's national policies support or hinder the transition to MFLs?
2. Where do synergies and collisions manifest across sectors such as agriculture, climate, and environment?
3. What institutional and governance gaps prevent effective coordination?
4. How can local priorities and knowledge be better integrated into national policy processes?

2. Analytical Framework and Methodology

This report applies a structured analytical framework to assess the extent to which Zimbabwe's policy and legal environment support or hinder the transition toward MFLs. The analysis focuses on where policies reinforce one another and where they contradict. Rather than looking at policies in isolation, the framework considers their interactions across sectors, acknowledging that land, water, biodiversity and livelihoods are closely interlinked. The analytical framework was selected to move beyond descriptive policy review toward how policies interact across sectors. This analytical framing grounds the conceptual discussion on multifunctionality outcomes and their relevance to Zimbabwe's Vision 2030 and the SDGs.

To capture these dynamics, we employed a mixed-methods strategy. The qualitative review examined 26 policy and strategy documents through systematic scoring, exploring the narratives, assumptions, and framings that illustrate coherence or expose contradictions. In parallel, the quantitative analysis applied discourse-based scoring to 25 policy documents. Although the broader policy corpus included both the NDS1 (2021-2025) and the Minister's NDS1 Action Plan (2021-2025), these were treated as a single analytical entry in the quantitative analysis because they address the same overarching framework. This ensured analytical consistency when generating measurable indicators of coherence and collision across the MFL elements. Combined, these complementary methods provide both quantifiable evidence and deeper insights into the governance and institutional dynamics shaping Zimbabwe's policy landscape. This section presents the analytical framework, methods, and validation process applied in this assessment.

2.1. Overview of the Analytical Framework

Policies were assessed using an analytical framework adapted from global literature and tailored to the Zimbabwean context. The dimensions are used as analytical categories rather than policy outcomes, enabling assessment of how policy documents acknowledge, prioritize, or align with key aspects of MFLs, rather than evaluating implementation or tangible results. In this way, the framework provides an ex-ante diagnostic lens for examining how policy intent and discourse reflect the elements underlying MFLs. The key MLF elements are summarized in Table 1, setting out their scope and related terminology.

Table 1: Core MFL elements used as analytical lens

Theme	Description	Synonyms/ Related Terms
Environmental Sustainability	Responsible use of land and natural resources that protect ecosystems and build resilience to climate risks, including integrated farming, climate-smart agriculture, and restoration of degraded areas.	• Sustainable land use policies • Climate-resilient • Landscape management • Integrated landscape management • Catchment management
Enabling Environment	Institutional and policy conditions that reduce fragmentation, promote coordination, and support implementation of landscape approaches.	• Cross-sectoral policy coherence • Multi-level governance • Institutional capacity • Policy alignment
Multifunctionality	Recognition of landscapes that deliver multiple economic, ecological, and social benefits simultaneously, rather than privileging one objective.	• Multi-use landscapes • Ecosystem services and productive land use • Integrated multifunctional landscapes
Improving Livelihoods	Policies that enhance food and nutrition security, reduce poverty, and promote sustainable livelihoods.	• Climate-resilient livelihoods • Nutrition-sensitive agriculture • Inclusive economic empowerment

Stakeholder Engagement and Social Inclusion	How policies acknowledge, frame, and provide for the participation of diverse stakeholders, especially women, youth, and marginalized groups, in landscape governance and access to resources.	• Participatory governance • Gender equality • Community participation • Rights-based approaches

Sources: Adapted from Braun and Clarke, (2006); Nilsson et al., (2016); and Weitz et al., (2017)

2.2. Definition of Key Terms

To ensure consistency across the analysis, two guiding concepts were applied. These build on the diagnostic framing introduced earlier and provide the criteria through which policy interactions were examined. Table 2 defines these terms and sets out the diagnostic checks used to identify them in practice.

Table 2: Definitions of Key Analytical Terms

Term	Definition	Diagnostic Checks
Policy Coherence	Policies are mutually reinforcing, with objectives, measures, and outcomes that consistently support transformation toward MFLs. They minimize trade-offs and maximize synergies across sectors and levels.	• Horizontal alignment across sectors (agriculture, environment, water, social development) • Vertical alignment across levels (national strategies, local plans) • Integration of multiple goals (economic, social, environmental) • Clear roles, coordination, and implementation mechanisms
Policy Collision	Policies directly contradict or undermine one another, creating conflicting objectives, measures, or incentives. Collisions generate negative trade-offs and governance barriers.	• Direct contradictions across policies • Incompatible measures • No provisions to resolve conflict

Sources: Howard, (2004); Nilsson et al., (2012); Öhman and Karlsson, (2025)

2.3. Policy and Document Selection Criteria

The analysis focused on national policy and strategy documents shaping natural resource governance and development in Zimbabwe, with attention to their implications for subnational implementation under the devolution agenda. Policies were selected based on their relevance to natural resource governance and development, their influence across multiple sectors, and their strategic importance for Zimbabwe's sustainable development agenda. This approach reflects established methods for assessing policy coherence and collisions (Nilsson et al., 2012; Organization for Economic Co-operation and Development (OECD, 2024) and is consistent with international guidance on integrated landscape governance (IPBES, 2019a; IPBES, 2019b; CGIAR, 2025).

For clarity, documents were grouped into four main domains: climate and environment; integrated development and governance; water and natural resources; and agriculture and food systems. This categorization offered three main advantages:

1. **Analytical focus:** grouping policies under common domains helped to trace mandates, overlaps, and contradictions.
2. **Cross-sectoral linkages:** it highlighted where synergies or collisions occur across domains (for example, agriculture policies that depend on water governance for delivery).
3. **System-level coherence:** thematic grouping mirrors the holistic nature of MFL transitions, where land, water, biodiversity, food systems, and governance are interconnected.

This domain-based structuring allowed the analysis to systematically examine how each policy cluster contributes to, or undermines, the MFL agenda. The full list of policies reviewed is presented in Table 3.

Table 3: Key Frameworks and Policies Reviewed

Domain/Cluster	Frameworks / Policies
Climate and Environment	1. Zimbabwe's National Climate Policy (ZNCP, 2017) 2. National Environmental Policy and Strategies (ZNEP, 2009) 3. Parks and Wildlife Act (PWA, 1975) 4. Zimbabwe's Revised Nationally Determined Contribution (ZRNDC, 2021) 5. National Climate Change Learning Strategy (NCCLS, 2020-2030) 6. National Biodiversity Strategy and Action Plan (NBSAP, 2014) 7. Zimbabwe's National Climate Change Response Strategy (NCCRS, 2015)
Integrated Development and Governance Frameworks	8. National Development Strategy 1 (NDS1, 2021-2025) 9. Vision 2030 10. National Gender Policy (NGP, 2013-2017) 11. Constitution of Zimbabwe (CoZ, 2013) 12. Minister's NDS 1 Action Plan (2021-2025)
Water and Natural Resources	13. Zimbabwe National Water Policy (ZNWP, 2012) 14. Environmental Management Act (EM Act, 2002; amended 2003)
Agriculture and Food Systems	15. National Agriculture Policy Framework (NAPF, 2019-2030) 16. Agriculture and Food Systems Transformation Strategy (AFSTS, 2020-2030) 17. Agriculture Recovery Plan (ARP, 2020) 18. Livestock Growth Plan (LGP, (2021-2025) 19. Horticulture Recovery and Growth Plan (HRGP, 2020) 20. Draft Traditional Grains Commercialization Strategy (TGCS, 2021) 21. Draft Agroecology Policy (DAP, 2021-2023) 22. Food and Food Standards Act (FFSA, 1971) 23. Food and Nutrition Security Policy (FNSP, 2013) 24. Tobacco Value Chain Transformation Plan (TVCTP, 2021-2025) 25. Fertilizers, Farm Feeds and Remedies Act (FFFRA,1947; amended 1980; consolidated to 2016) 26. Plant Pests and Diseases Act (PPDA, 1959; amended 2001)

2.4. Methods for Assessing Coherence and Collisions

Two complementary methods were applied to analyze policy coherence and collisions. The quantitative approach used discourse analysis to measure the degree of consistency and divergence in policy texts, while the qualitative approach applied systematic scoring to capture the narratives, assumptions and contradictions embedded in policies. Both approaches were anchored in the MFL elements to ensure that the analysis remained aligned with the program's core priorities. Together, they offer a balanced view that combines measurable evidence with a deeper understanding of the landscape dynamics at play.

2.4.1. Quantitative Analysis: Discourse Analysis Framework

To quantitatively analyze policy coherence and collision, discourse analysis was conducted through three key phases. This process, illustrated in Figure 1, began with data collection and preprocessing, which entailed systematically gathering policy texts, converting them into machine-readable formats, and standardizing the content. This included extracting raw text from PDFs, removing non-lexical elements such as punctuation and numbers, and organizing the data into a structured corpus for analysis in the statistical software *R*. Optical character

recognition (OCR) tools and text-mining libraries were employed to facilitate these tasks, ensuring consistency across all policy documents.

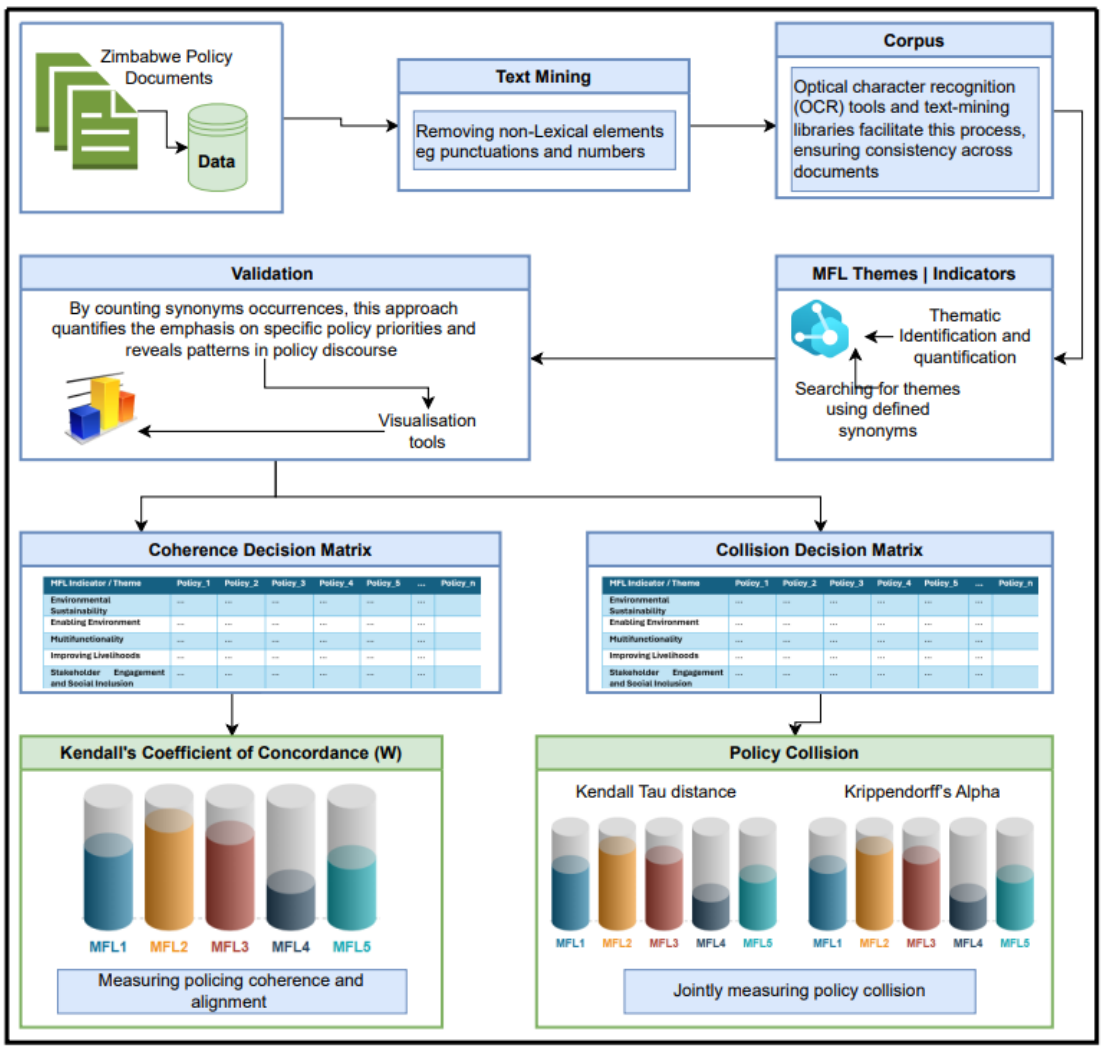

Figure 1: Framework for analyzing policy coherence and collision, showing text processing, identification of MFL elements, and quantification of policy emphasis across policy documents. The framework uses decision matrices to compare policies across five thematic areas, as defined in Table 1. Statistical measures such as Kendall's W, Kendall Tau distance, and Krippendorff's Alpha are applied to assess policy coherence and detect potential collisions.

The second phase focused on thematic identification and quantification. In this stage, the five MFL elements were operationalized using synonym sets to capture discursive nuances. A document-term matrix (DTM) was used to organize the textual data numerically, allowing for systematic measurement of theme prevalence. By counting term occurrences, this approach quantified the emphasis placed on specific policy priorities and uncovered patterns within institutional and policy discourses. To enable comparison across the elements, mention counts (reflecting discursive emphasis) for each policy document were averaged to generate an emphasis score per element. These averages were then normalized using min-max scaling to a 0-1 range, ensuring that differences reflect relative discursive emphasis rather than document length or verbosity. The resulting normalized ratings therefore indicate discursive presence, rather than implementation performance or institutional strength. The final phase involved interpretation and validation to contextualize the quantitative findings. Visualization tools, such as heatmaps, were

used to highlight dominant elements, while manual reviews ensured alignment between automated term counts and the actual textual content.

2.4.1.1. Statistical Assessment of Coherence

The application of discourse analysis through Natural Language Processing (NLP) facilitated the construction of a coherence decision matrix, which systematically maps the MFL elements against relevant policy documents. Following the standardization of the matrix data, we employed Kendall's Coefficient of Concordance (W), a non-parametric statistic designed to assess the degree of agreement among multiple policy documents. Conceptualizing policy coherence as the alignment or consensus across various policy texts, Kendall's W emerges as a particularly appropriate analytical tool (Kendall and Gibbons, 1990; Legendre, 2005).

2.4.1.1.1. Kendall's Coefficient of Concordance (W) as a measure of Policy Coherence

Kendall's W offers several advantages over correlation-based methods, especially in contexts involving numerous raters or documents. In this quantitative analysis, 25[1] policy documents were evaluated against the five elements. Unlike parametric techniques, Kendall's W does not require assumptions of normality or interval-level data, making it well-suited for ordinal data typically encountered in policy analysis (de Raadt et al., 2021). The coefficient ranges from 0 (no agreement) to 1 (perfect agreement), providing a robust measure of consensus even in large datasets. Table 4 summarizes the thresholds used to interpret Kendall's Coefficient of Concordance (W) as levels of policy coherence across the elements. Mathematically, we conceptualized the Kendall's Coefficient of Concordance (W) for this use case as:

$$W = \frac{12\sum_{j=1}^{n}(R_j - \overline{R})^2}{m^2(n^3 - n)}$$

Where*:*

- m = number of raters (in our use case, 25 policy documents)
- n = number of items being ranked (in our case, five MFL elements/ synonyms)
- R_j= sum of ranks for the *j*-th item (theme/synonym)
- $\bar{R}$ = average of the R_j values

While correlation methods often focus on pairwise comparisons, Kendall's W captures overall agreement, offering a more holistic perspective on thematic convergence across policy frameworks. This makes it effective for identifying shared priorities and strategic alignment in policy landscapes, rather than merely quantifying numerical similarity. Such an approach aligns with contemporary discourse-based methodologies in policy analysis, which emphasize the interpretive and contested nature of policy texts (Goodwin, 2011).

Table 4: Interpretation of Kendall's Coefficient of Concordance (W) in the context of measuring policy coherence, that is MFL indicators across policy documents in Zimbabwe.

W Range	Interpretation	In the context of policy coherence
0.00 – 0.10	Very weak agreement	Very weak coherence
0.10 – 0.30	Weak agreement	Weak coherence
0.30 – 0.50	Moderate agreement	Moderate coherence

[1]The initial list contained 26 documents, but two: the National Development Strategy 1 (2021-2025) and the Minister's NDS1 Action Plan (2021-2025) both addressed NDS1 and were therefore combined into a single entry for the quantitative analysis only to avoid duplication.

0.50 – 0.70	Strong agreement	Strong coherence
0.70 – 0.90	Very strong agreement	Very strong coherence
0.90 – 1.00	Almost perfect or perfect agreement	Almost perfect or perfect coherence

2.4.1.2. Statistical Assessment of Collision

To analyze policy collision, we employed a set of discordance indices. Specifically, we adopted a hybrid approach that combines Kendall's Tau distance and Krippendorff's alpha. This dual method enhances the interpretation of policy collisions while compensating for the limitations inherent in each individual method.

a) Krippendorff's alpha as a Measure of Policy Collision

Krippendorff's alpha (*α*) is a widely used reliability coefficient that measures the level of agreement among raters, observers, or coders (Krippendorff, 2013). We selected Krippendorff's alpha for our analysis because it accommodates any number of raters as in our case, where each theme or MFL element indicator is evaluated across 25 policy documents. Additionally, it supports various data types, including nominal, ordinal, interval, and ratio scales, and it naturally handles missing values. Although primarily a measure of reliability, Krippendorff's alpha is defined over the range $-\infty \leq \alpha \leq 1$. The interpretation of its values is presented in Table 5. Based on this use case, Krippendorff's Alpha (α) was mathematically conceptualized as:

$$\alpha = 1 - \frac{D_o}{D_e}$$

Where:

- α = Krippendorff's alpha (ranges from -∞ to 1)
- D_o = Observed disagreement among raters (policy documents)
- D_e = Expected disagreement by chance.

The observed disagreement D_o is defined as*:*

$$D_o = \frac{1}{\sum_i n_i(n_i - 1)} \sum_i \sum_{j<k} \sigma^2 (v_{ij}, v_{ik})$$

and the expected disagreement D_e as

$$D_e = \frac{N}{N(N-1)} \sum_c \sum_{c'} n_c n_{c'} \sigma^2 (c, c')$$

Where*:*

- **N** = Total number of units (MFL elements, Synonyms)
- $\boldsymbol{n\_i}$ = Number of ratings for unit i (each theme or synonym), from the 25 policy documents
- c = Categories or values assigned (e.g., frequency counts or ranks)
- $\boldsymbol{v\_\{ij\}}$ = Value assigned by rater j to unit i
- $\sigma(v_{ij}, v_{ik})$ = Distance function between values assigned by raters j and k to unit i
- n_c = total number of times category *c* was assigned
- $\delta(c, c')$ = distance between categories c and c'

The Krippendorff's Alpha *(α)* is based the following*:*

- Units: MFL elements
- Raters: Policy documents
- Values: Frequency of mentions or ranks per theme/synonyms per document
- Goal: Measure how consistently elements are prioritized across documents

Table 5: Krippendorff's alpha (α) interpretation guide in the context of policy collision use case. source: (Krippendorff, 2004; Lombard et al., 2002)

Krippendorff's alpha	Common Interpretation Thresholds	Policy collision use case
$\boldsymbol{\alpha = 1}$	Perfect agreement	No evidence of policy collision
$\boldsymbol{\alpha = 0}$	Agreement equals chance	Evidence of policy collision not convincing
$\boldsymbol{\alpha < 0}$	Systematic disagreement (raters disagree more than expected by chance)	Evidence of policy collision

A key limitation of Krippendorff's alpha in assessing policy collisions is that it measures only the overall level of disagreement without accounting for the magnitude or direction of disagreements. In practice, this means it treats all disagreements equally whether the differences between policies are minor or large, reflecting fundamental differences. Consequently, it falls short in capturing the extent of misalignment in policy priorities. Kendall's Tau distance addresses this shortcoming by quantifying the degree of divergence in policy rankings, thereby enabling a clearer distinction between minor inconsistencies and significant policy collision.

b) Kendall Tau Distance as a Measure of Policy Collision.

The Kendall Tau distance quantifies the degree of disagreement between policy rankings by counting the number of pairwise inconsistencies. This method effectively captures how differently various policies align with specific MFL elements. Its interpretation is relatively straightforward compared to other techniques: a higher Kendall Tau distance indicates greater discordance, suggesting weaker policy coherence, while a lower distance reflects stronger concordance, implying better alignment across policies. Table 6 provides a simplified guide for interpreting Kendall tau distance in the context of policy collision. In the context of our use case that is measuring policy collision, we conceptualized Kendall Tau Distance mathematically as follows:

Let:

- m= policy documents, indexed $d = 1, \dots, 25$
- MFL theme t has synonym set $\boldsymbol{S_t}$.
- $OCC_{d,s} \in \{0, |1\}\ or\ \mathbb{R} \geq 0$ occurrence/score of s d in document d. (No weights.)
- MFL element theme score for document d:

$$\boldsymbol{score_{d,t}} = \sum_{s \epsilon \boldsymbol{S_t}} \boldsymbol{OCC_{d,s}}.$$

- Convert scores into ranks $r_d^{(t)}$ (ranks may contain ties)

For Kendall Tau Distance (KTD)*:*

- Let $r_d^{(t),i}$ and $r_d^{(t),m}$ be the ranks/ratings, assuming no ties, then

$$K_t(i,n) = \sum_{1 \leq i \leq j \leq 25} 1((r_i^{(t),i} - r_j^{(t),i})(r_i^{(t),n} - r_j^{(t),n}) < 0)$$

- There are $\binom{P}{n}$ number of unique pairs of policy documents, therefore: $\boldsymbol{d_t(i,n) = \frac{K_t(i,n)}{\binom{P}{n}}}$

Table 6: Kendall Tau distance interpretation guide in the context of assessing policy collision use case. Thresholds adapted from Kendall (1938) and Diaconis and Graham (1977).

Rule of Thumb Scale	Interpretation	Policy collision use case
0.00 – 0.20	Low collision (High coherence)	Policies are very similar in their priorities; only minor differences in theme ranking.
0.21 – 0.50	Moderate collision	Some notable misalignments in policy priorities, but still a level of shared direction.
0.51 – 0.80	High collision	Policies rank elements quite differently, showing clear divergence and reduced coherence.
0.81 – 1.00	Extreme collision (Opposition)	Policies are fundamentally at odds, with priorities ordered in near-opposite ways.

2.4.1.3. Analytical Tools and Software

The analysis was performed using the statistical software *R,* version 4.4.1, employing the *irr* package (version 0.84.1), which is specifically designed for computing various coefficients of interrater reliability and agreement. This package offers a comprehensive and flexible set of tools for evaluating agreements across nominal, ordinal, and continuous data types. It includes measures such as Cohen's and Fleiss' kappa for categorical data, multiple forms of Intraclass Correlation Coefficients (ICCs) for continuous ratings, and Krippendorff's alpha, which is particularly useful for handling multiple raters and datasets with missing values. Additionally, the package supports a variety of data formats, enables the computation of bootstrapped confidence intervals, and is well-suited for assessing both agreement and reliability across diverse research designs (Gamer et al.,2012).

2.4.2. Qualitative Analysis: Policy Scoring Framework

The qualitative review complemented the quantitative analysis by examining how individual policies are aligned with or contradicted the MFL elements. This approach draws conceptually on Nilsson et al., (2016)'s three-step approach to policy coherence analysis. This approach involves compiling an inventory of objectives, applying a screening matrix to assess interactions, and conducting in-depth analysis of key cases. Our adaptation applies these steps through a structured scoring system, allowing systematic identification of synergies and contradictions across objectives, instruments, and implementation practices. The process followed three main steps:

2.4.2.1. Step 1: Grouping into domains

As noted in Table 3, policies were first organized into four thematic domains to provide structure and allow comparison across sectors. The domains were: (i) agriculture and food systems, (ii) water and natural resources, (iii) climate and environment, and (iv) integrated development and governance frameworks. This grouping enabled systematic comparison across sectors and facilitated the identification of areas where policy elements converged or diverged. This approach aligns with the sectoral clustering used in policy coherence studies (Nilsson et al., 2012) and facilitated the identification of horizontal coherence across sectors and vertical coherence across governance levels, as emphasized in the institutional interaction literature (Young, 2002; Oberthür and Gehring, 2006).

2.4.2.2. Step 2: Scoring system

Within each domain, policies were assessed against the five elements using a five-point scale (see Table 7). Scores ranged from **+2 (explicit support)** to **–2 (explicit contradiction)**, with 0 applied where a principle was not addressed, which is an adaptation to the method used by Nilsson et al., (2016). Direct textual evidence was recorded for each score to ensure transparency and consistency, reflecting best practices in qualitative policy analysis (May et al., 2006; OECD, 2002)

This approach builds on Nilsson et al., (2012) screening matrix, which evaluates interactions in terms of strength (strong, weak, neutral) and direction (synergy or conflict). Applying this logic allowed the scoring system to capture not only the degree of alignment but also the specific ways in which policies either supported or conflicted with MFL elements.

Table 7: Scoring framework and alignment thresholds for qualitative policy analysis

Score	Meaning	Application
+2	Explicitly supports the MFL element	Policy objectives, instruments, or provisions directly and clearly advance the element (e.g., explicit targets for climate-smart agriculture or community-based conservation).
+1	Indirectly supports the MFL element	Policy provides partial or indirect support, but integration is weak or incomplete (e.g., livelihood programs with minimal ecological safeguards).
0	Not addressed	Policy does not reference or engage with the MFL element.
–1	Indirectly collides with the MFL element	Policy introduces measures that partially contradict other policies, creating tensions (e.g., incentives for input subsidies with weak sustainability conditions)
–2	Explicitly collides with the MFL element	Policy contains clear contradictions with other frameworks, undermining the element (e.g., directives promoting wetland cultivation that oppose the National Wetlands Policy).

The process was implemented in an Excel workbook containing three linked components:

- **Sheet 1:** MFL elements, their descriptions, and synonyms to guide interpretation.
- **Sheet 2**: the five-point scoring framework with application examples.
- **Sheet 3:** the actual policy scoring, totals, and classification into alignment categories.

This system ensured consistency in scoring, transparency in interpretation, and the ability to check and compare results across all documents.

2.4.2.3. Step 3: Classification categories

Element scores were summed across the five elements to produce a total score. In theory, totals could range from –10 to +10, although in practice most policies score between 0 and +10. Policies were classified into four alignment categories based on their total score, with clear thresholds for interpretation:

- **Strong Alignment (+8 to +10):** Policy demonstrates consistent, explicit integration of most or all MFL elements.
- **Moderate Alignment (+4 to +7):** Policy shows partial or uneven integration, with strengths in some elements but gaps in others.
- **Weak Alignment (0 to +3):** Policy provides little to no substantive integration of MFL elements. A score of 0 indicates that a principle is not addressed.
- **Collision (<0):** Policies with a total score below zero (e.g. –1 or –2) are classified as collisions, indicating they actively contradict MFL elements across multiple dimensions.

It is worth emphasizing that in this analysis, ***alignment*** is treated as synonymous with policy coherence, meaning the extent to which policies are consistent with MFL elements. Strong, moderate, and weak alignment therefore represent different levels of coherence. ***Collision*** denotes policy incoherence, where measures actively contradict one or more MFL elements.

This layered approach reflects Nilsson et al., (2012) insight that policy coherence must be analyzed across objectives, instruments, and implementation practices. It also draws on Hall (1993) distinction between policy goals and instruments, and Pressman and Wildavsky (1973) findings on implementation gaps, which highlight that coherence often deteriorates during implementation.

2.5. Validation Process and Stakeholder Engagement

The validation process was undertaken through a participatory policy dialogue workshop held in Mbire District at Angwa on 20th October 2025 (see Figure 2).[2] Mbire District was selected because it is one of the designated MFL implementation sites for Zimbabwe under the CGIAR MFL Science Program. Conducting the validation in Mbire allowed the team to take the analysis back to the farmers, local authorities and landscape actors directly affected by these policies, ensuring that the findings were stress tested against lived realities rather than purely desk-based interpretation.

The session formed a core part of the study's stakeholder engagement process and was aimed at grounding the desk-based policy analysis in local realities. During the workshop, preliminary findings from the policy coherence and collision analysis were presented and discussed with a wide range of local actors. Participants included farmers, ward councilors, traditional leaders, agricultural extension officers from the Agricultural And Rural Development Advisory Services (ARDAS), officers from the Environmental Management Agency (EMA), the Zimbabwe National Water Authority (ZINWA), the Zimbabwe Parks and Wildlife Management Authority (ZPWMA), the Forestry Commission (FC), and the Ministry of Lands, Agriculture, Fisheries, Water and Rural Development (MLAFWRD). Representatives from the Ministry of Women Affairs, Community, Small and Medium Enterprises Development (MWACSMED), the Mbire Rural District Council (MRDC), the Communal Areas Management Program for Indigenous Resources (CAMPFIRE), Ward and Village Development Committees (WADCOs and VIDCOs), civil-society organizations, and community-based groups also took part (Figure 2). The event was co-facilitated by the International Water Management Institute (IWMI) and the International Maize and Wheat Improvement Center (CIMMYT).

[2] Mbire is a remote, rural district in northern Zimbabwe, bordering Mozambique and Zambia. The district is characterized by semi-arid conditions, reliance on rainfed agriculture, and proximity to major wildlife corridors, which contribute to recurring human-wildlife conflict and climate vulnerability, shaping local livelihoods and governance dynamics (Rewilding Academy, 2025).

Figure 2: Group photo of participants at the Policy Validation Workshop in Mbire District. Photo credit: Ngowenani Nohayi (IWMI)

The main objective of the workshop was to test whether the national level findings on policy coherence and collision reflected the realities that farmers and local institutions face in managing land, water, and natural resources. Although Zimbabwe has well established structures for participatory governance, cultural norms, limited information sharing, and systemic exclusion restrict meaningful engagement, particularly for women and youth (Chazovachii et al., 2022). The workshop therefore placed strong emphasis on inclusion and active participation from all groups present with facilitators ensuring balanced contributions across participants to avoid dominance by a few individuals and to create space for quieter voices to be heard.

Participants were randomly divided into three mixed and gender-balanced discussion groups that brought together farmers, community leaders, women and youth representatives and technical officers. This approach ensured that diverse social and gendered perspectives informed the discussions on how policies are interpreted and applied in practice. Discussions centered on various issues such as water access, land use restrictions, human-wildlife conflict, and consultation processes in local planning and by-law formulation. Each group presented its reflections, which were synthesized through plenary dialogue to capture collective perspectives on coherence and coordination challenges across sectors and scales. These insights grounded the study in the lived experiences of those managing Mbire's MFL and provided an important reference point for interpreting the results and recommendations that follow.

3. Results

The results show how Zimbabwe's policies either support or contradict the MFLs elements. The analysis highlights both areas of coherence and points of collision, showing how some policy frameworks complement one another while others reflect competing priorities that lead to inconsistencies. The section begins with the quantitative assessment, which maps overall patterns and levels of agreement across policies, before turning to the qualitative review, which explains these trends through the provisions and priorities embedded in policy frameworks. To support interpretation of the figures in this chapter, policy acronyms, MFL element abbreviations, and statistical measures used throughout the chapter are summarized in Table 8 for ease of reference.

Table 8: Figure-specific policy acronyms, abbreviations, and statistical measures

Domain / Category	Abbreviation / Term	Meaning
Climate and Environment	ZNCP	Zimbabwe National Climate Policy (2017)
	ZNEP	National Environmental Policy and Strategies (2009)
	PWA	Parks and Wildlife Act (1975)
	ZRNDC	Zimbabwe's Revised Nationally Determined Contribution (2021)
	NCCLS	National Climate Change Learning Strategy (2020-2030)
	NBSAP	National Biodiversity Strategy and Action Plan (2014)
	NCCRS	National Climate Change Response Strategy (2015)
Integrated Development and Governance	NDS1	National Development Strategy 1 (2021-2025)
	Vision2030	Zimbabwe Vision 2030
	NGP	National Gender Policy (2013-2017)
	COZ	Constitution of Zimbabwe (2013)
	NDS1 AP	Minister's National Development Strategy 1 Action Plan (2021-2025)
Water and Natural Resources	ZNWP	Zimbabwe National Water Policy (2012)
	EM Act	Environmental Management Act (2002; amended 2003)
Agriculture and Food Systems	ZNAPF	National Agriculture Policy Framework (2019-2030)
	AFSTS	Agriculture and Food Systems Transformation Strategy (2020-2030)
	ARP	Agriculture Recovery Plan (2020)
	LGP	Livestock Growth Plan (2021-2025)
	HRGP	Horticulture Recovery and Growth Plan (2020)
	TGCS	Draft Traditional Grains Commercialization Strategy (2021)
	DAP	Draft Agroecology Policy (2021-2023)
	FFSA	Food and Food Standards Act (1971)

	FNSP	Food and Nutrition Security Policy (2013)
	TVCTP	Tobacco Value Chain Transformation Plan (2021-2025)
	FFFRA	Fertilizers, Farm Feeds and Remedies Act (1947; amended 1980; consolidated 2016)
	PPDA	Plant Pests and Diseases Act (1959; amended 2001)
MFL elements	MFL	Multifunctional Landscapes
	ES	Environmental Sustainability
	EE	Enabling Environment
	MF	Multifunctionality
	IL	Improving Livelihoods
	SE	Stakeholder Engagement and Social Inclusion
Statistical measures	W	Kendall's Coefficient of Concordance
	KTD	Kendall Tau Distance
	α	Krippendorff's Alpha
	Normalized score	Min-max scaled discursive emphasis score (0-1) used to compare relative emphasis across policy documents
Institutional acronym	EMA	Environmental Management Agency

3.1. Quantitative policy coherence and collision in Zimbabwe

The quantitative analysis provides an overview of how Zimbabwe's national policies address the MFL elements. The heatmap in Figure 3 shows that (based on synonym counts), terms associated with multifunctionality and environmental sustainability have a higher discursive presence in the corpus of 25 policies, reflecting language use rather than explicit policy prioritization or implementation directives. This pattern points to a strong policy acknowledgement on ecological and sustainability functions. By contrast, references to stakeholder engagement and improving livelihoods show a more moderate discursive presence, while the enabling environment appears least emphasized in the policy texts. Importantly, this reflects differences in narrative framing rather than the degree of coordination or implementation in practice. The NDS1 (2021-2025) and ZNWP (2012), stand out for their broad thematic coverage, while others such as the country's Constitution and the HRGP (2020) have more focused sectoral mandates.

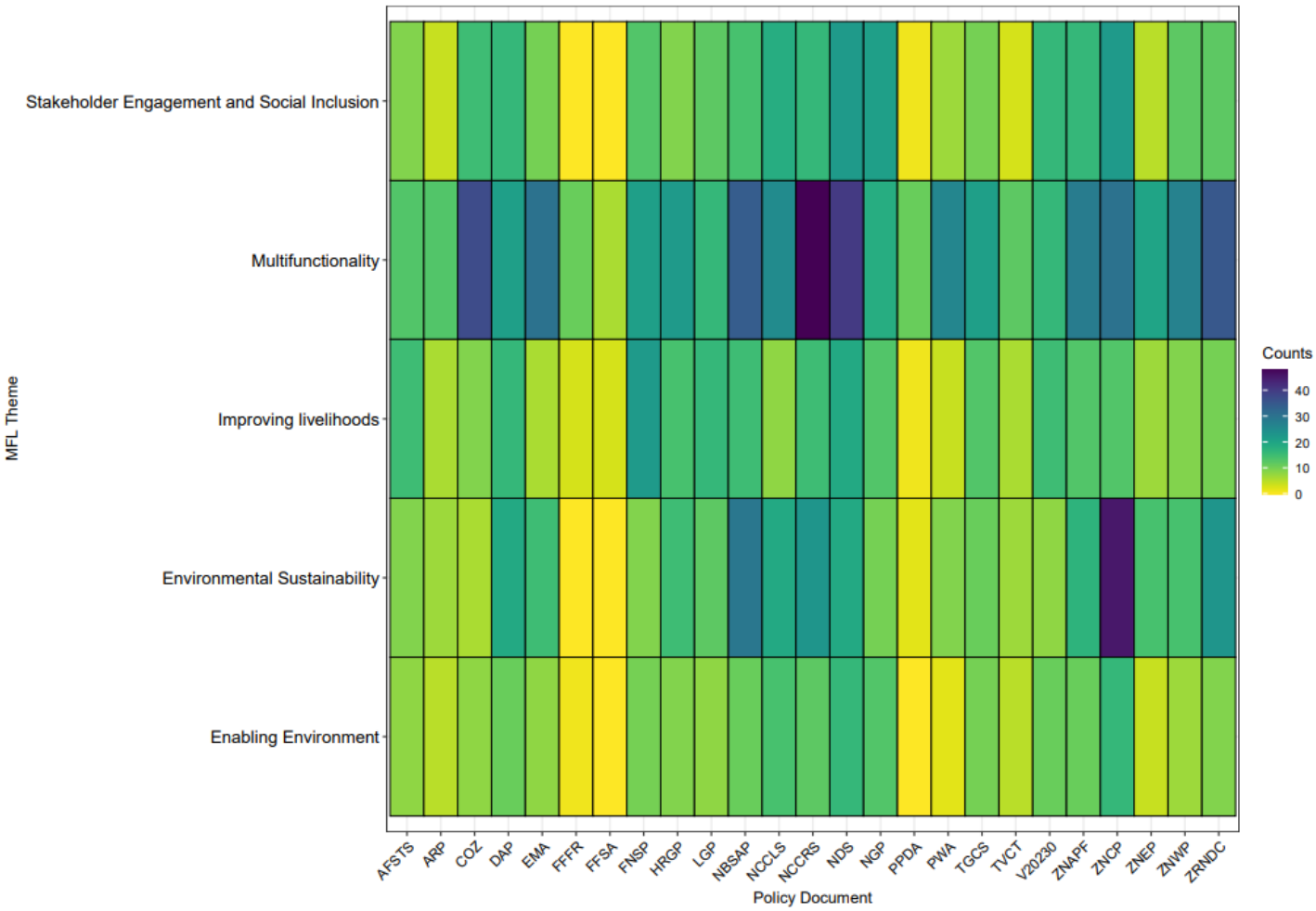

Figure 3: Mapping policy attention to MFL elements: heatmap of MFL theme mentions across Zimbabwe's national policy documents. This heatmap displays the frequency of references to each MFL element within individual policy documents. Color intensity reflects a continuous scale of counts ranging from 0 to 50, with lighter shades indicating lower frequencies and darker shades indicating higher frequencies of mention. Values are therefore distinguished along a continuous gradient rather than discrete bins, such that zero values are visually distinct from higher counts, and incremental differences across ranges (e.g. 1-10, 11-20, 21-30) are represented through progressively increasing color intensity.

Aggregated results in Figure 4 confirm these broad patterns, but with subtle differences. Improving livelihoods and environmental sustainability emerge as the most emphasized elements, indicating that food security, poverty reduction, and ecological resilience dominate the policy discourse. Stakeholder engagement and social inclusion register moderate but uneven attention, suggesting partial recognition of participation and equity, but with inconsistent depth across frameworks. In contrast, multifunctionality and enabling environment ranked lowest, suggesting that integrated approaches and institutional coordination remain weakly embedded. This apparent shift reflects the use of different analytical lenses: raw synonym counts capture the frequency of references, whereas normalized scores and agreement measures summarize relative emphasis and consistency across documents. As a result, these approaches can yield different rankings for some MFL elements, particularly multifunctionality. Importantly, while there are relative differences between elements, all scores fall below the average threshold, pointing to a generally weak emphasis on MFL priorities in the overall policy landscape.

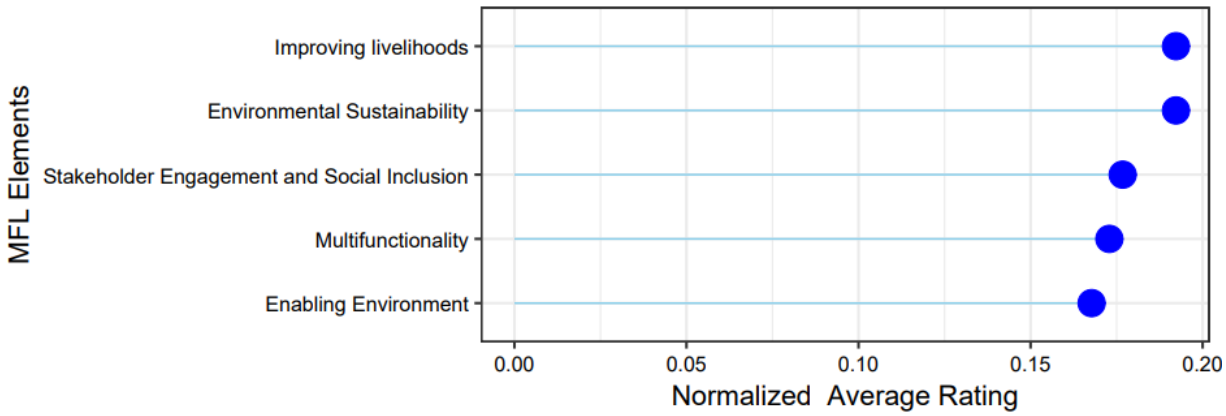

Figure 4: Overall normalized average ratings of MFL elements across 25 Zimbabwean policy documents, showing stronger emphasis on improving livelihoods and environmental sustainability, and weaker emphasis on multifunctionality and the enabling environment.

The lollipop plot in Figure 5 shows the normalized average ratings of discursive emphasis on the elements across policy documents. Each red dot represents a document's score, with higher values indicating a stronger 'rhetorical' presence of MFL related themes such as sustainability, productivity, biodiversity, and social inclusion. The ZNCP (2017) records the highest relative emphasis (just above 0.4), while the Plant Pests and Diseases Act (PPDA) scores close to zero, indicating very limited reference to MFL-related terminology. This variation reflects differences in narrative emphasis across Zimbabwe's policy landscape, indicating potential entry points for improving coordination and alignment across policy frameworks.

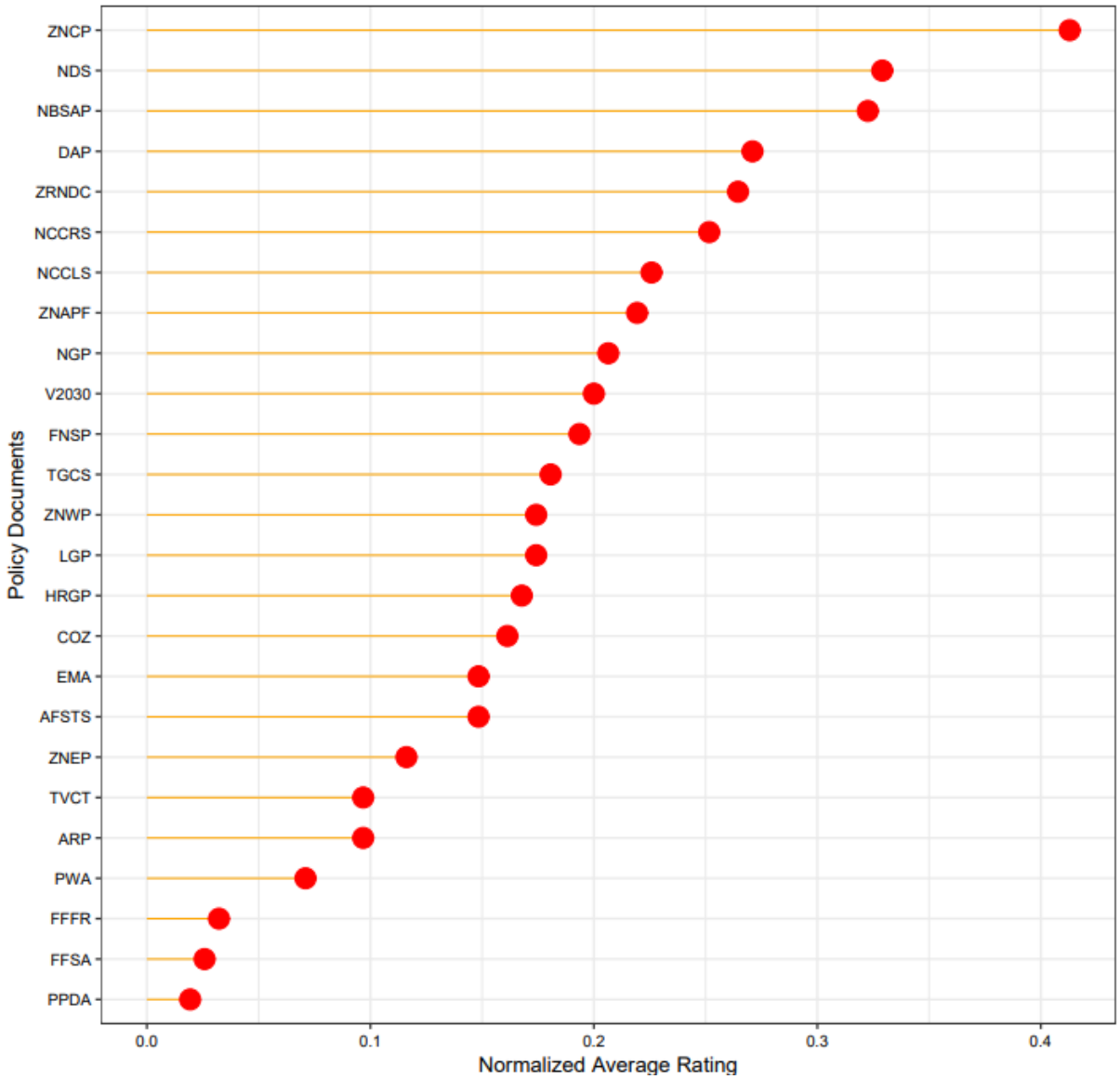

Figure 5: Normalized average ratings of discursive emphasis across policy documents, where each red dot represents a document's score. Higher values indicate stronger alignment with MFL-related themes such as sustainability, productivity, biodiversity, and social inclusion

3.1.1. Policy coherence: Kendall's coefficient of concordance (W)

Kendall's coefficient of concordance (W) is used here to capture how consistently different policy documents emphasize similar priorities, rather than how strongly any single priority is expressed. Figure 6 presents Kendall's Coefficient of Concordance (W) values across the elements of policy coherence derived from 25 policy documents. The results show clear variation in the degree of alignment. Improving livelihoods tops the list (W ≈ 0.37), reflecting moderate alignment among policies in advancing livelihood priorities. Multifunctionality (W ≈ 0.25) and environmental sustainability (W ≈ 0.20) fall into the weak-to-moderate range, suggesting partial but uneven alignment across policy frameworks. Conversely, enabling environment (W ≈ 0.11) and stakeholder engagement and social inclusion (W ≈ 0.13) demonstrate very weak alignment, underscoring institutional fragmentation and weak participation mechanisms. When considered together, the overall W value for all MFL elements (≈ 0.03)

reveals negligible systemic agreement, highlighting that while some policies converge on livelihoods and sustainability, the broader portfolio remains fragmented.

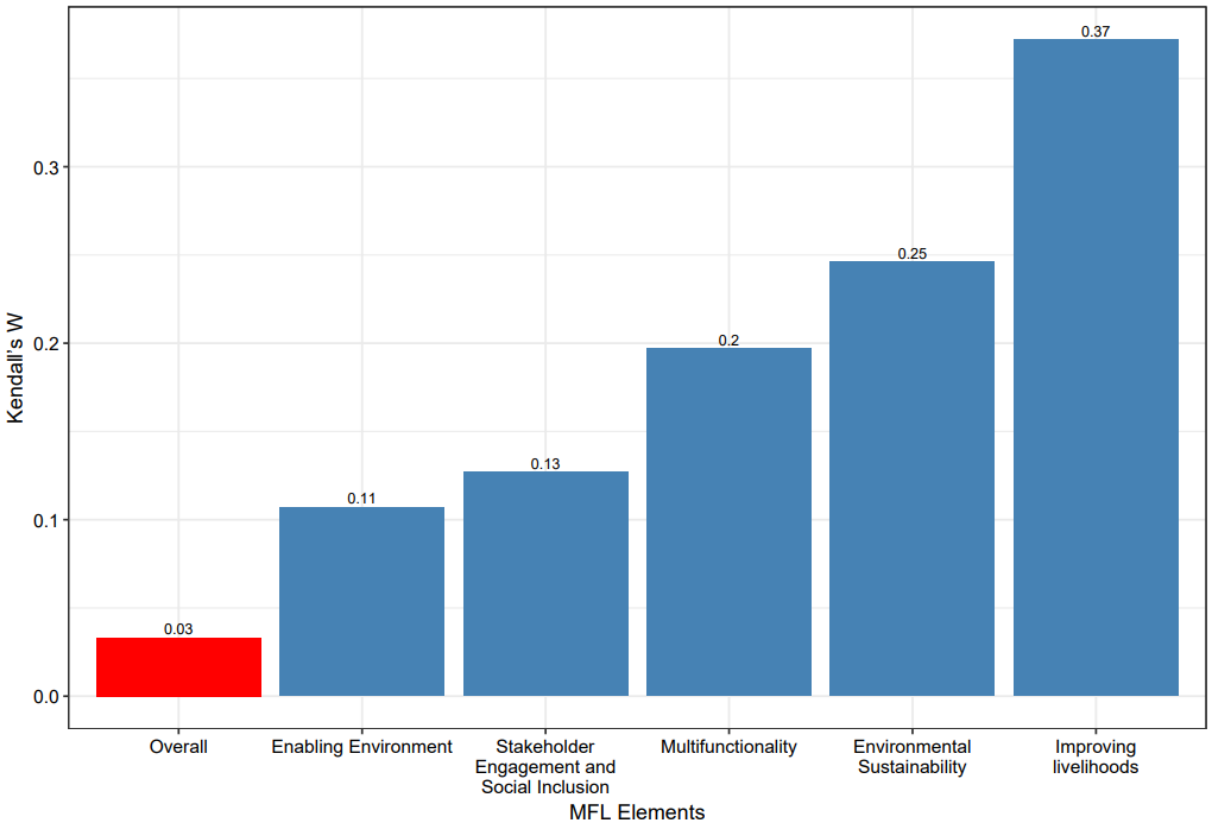

Figure 6: Kendall's Coefficient of Concordance (W) across 25 policy documents, showing varying levels of agreement on how policies address key MFL elements. Values range from 0 (no agreement) to 1 (perfect agreement), with values below 0.3 indicating weak agreement. The overall W value of 0.03 reflects very limited systemic coherence when all elements are considered together.

3.1.2. Policy collision: Kendall Tau distance and Krippendorff's alpha

While Kendall's W highlights areas of convergence across policies, the collision metrics focus on where policies diverge. Figure 7 compares results using two distinct metrics, Kendall Tau Distance and Krippendorff's Alpha measures of policy collision. The Kendall Tau distance plot quantifies the degree of collision in policy rankings across policy documents, with higher values indicating greater collision. For instance, environmental sustainability and stakeholder engagement and social inclusion show high collision scores (0.94 and 0.91 respectively), suggesting substantial divergence in policy priorities on these themes. Although improving livelihoods and multifunctionality exhibit lower scores, they exhibit more collision than consensus across different policy documents. Krippendorff's Alpha adds a further lens by indicating whether policy emphasis reflects shared agreement or systematic disagreement across the policy set. Alpha values are near zero or negative for most elements, implying weak consensus. Improving livelihoods is the only element with a positive alpha value, indicating marginal agreement relative to other priorities.

These metrics reveal that while some elements like improving livelihoods are relatively less contentious, others such as environmental sustainability are highly polarized across Zimbabwe policy documents. The combined use

of Kendall Tau Distance and Krippendorff's Alpha in assessing policy collision has important implications for evidence-based and inclusive policy formulation. High Kendall Tau scores indicate significant divergence in policy documents, suggesting that priorities are not aligned. This can lead to fragmented or conflicting policy actions. Simultaneously, low or negative Krippendorff's Alpha values reflect poor consensus and reliability in policy documents formulation, reinforcing the presence of disagreement. For policymakers, these findings highlight the need for deliberative engagement processes to reconcile differing views.

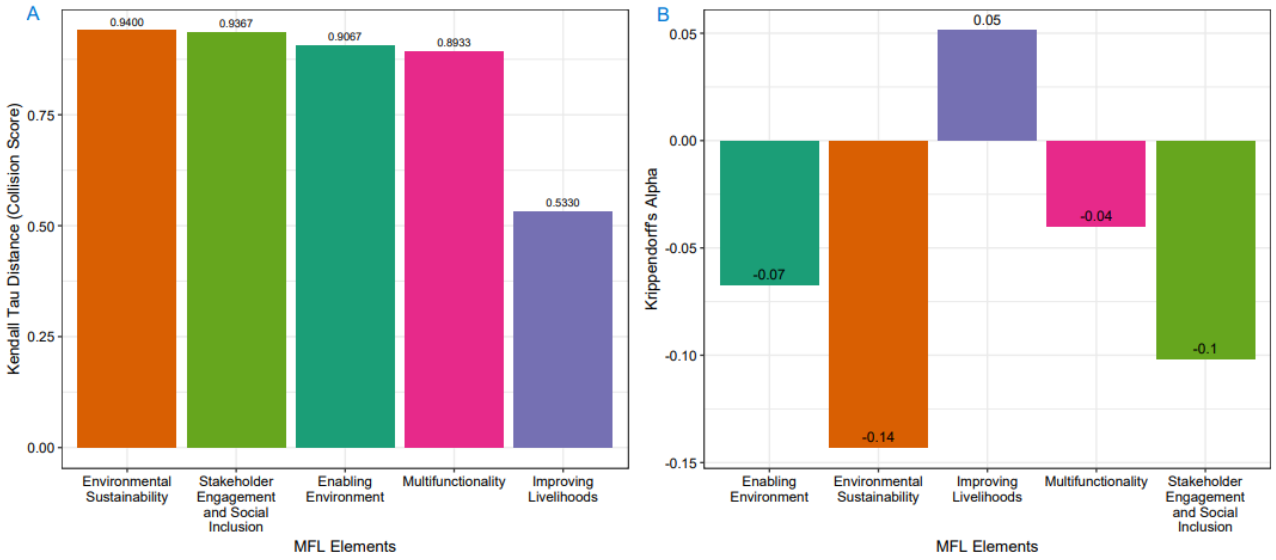

Figure 7: Measures of policy collision across MFL elements using A) Kendall Tau Distance and B) Krippendorff's Alpha.

3.1.3. Collision distance comparison between MFL elements

To understand the extent of collisions among elements, Figure 8 compares Kendall Tau distances between pairs of elements. In this comparison, higher distance values indicate greater divergence in how two priorities are emphasized across policy documents**.** Notably, the pair multifunctionality vs improving livelihoods shows the highest collision score (approximately 0.73), indicating that these two elements are often emphasized differently across policy documents. This suggests that policies tend to frame multifunctionality and livelihood improvement through distinct narratives rather than presenting them as mutually reinforcing. In contrast, enabling environment vs stakeholder engagement shows the lowest score (approximately 0.23), implying a strong alignment and mutual reinforcement in their perceived importance across policy documents. These insights are critical for guiding integrated landscape planning, as they highlight where consensus exists and where targeted dialogue or harmonization may be needed.

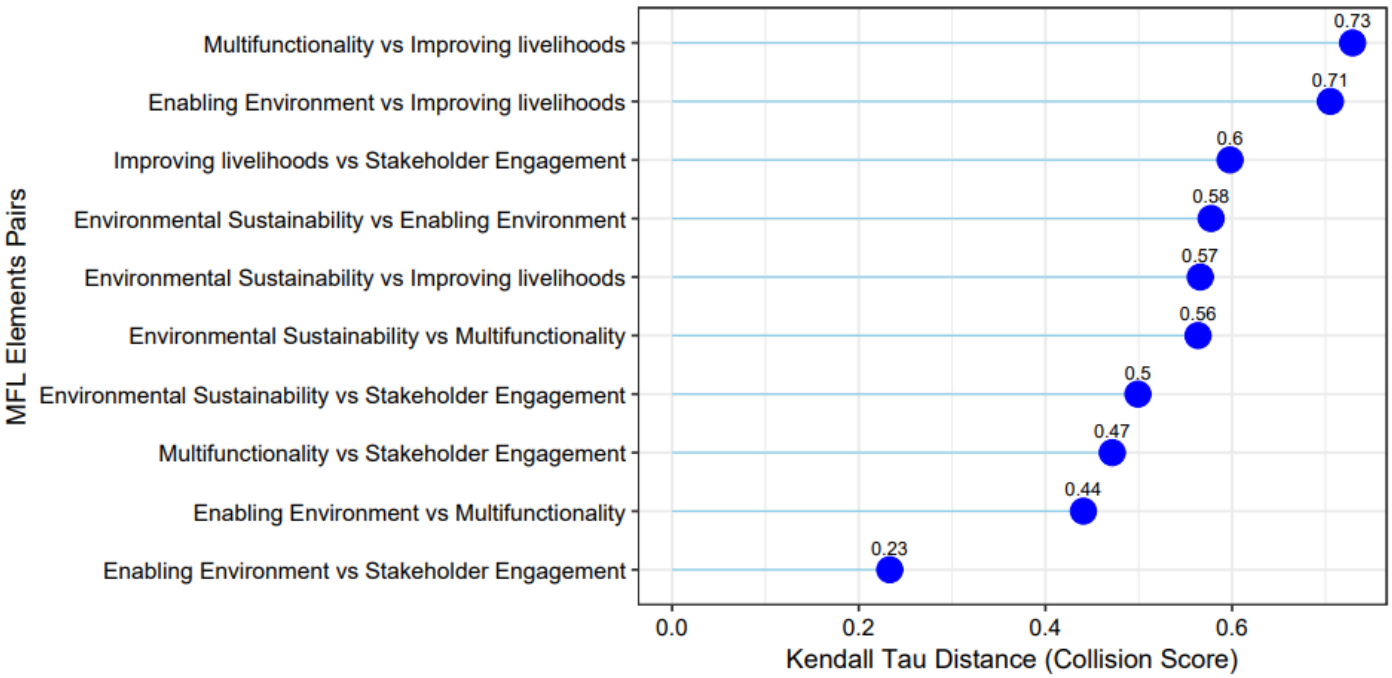

Figure 8: Ranking divergence among MFL element pairs based on Kendall Tau Distance, where higher scores indicate greater collision or divergence in policy perspectives and highlight areas requiring consensus-building.

3.2. Qualitative policy coherence and collision in Zimbabwe

The qualitative scoring of 26[3] policy and strategy documents provides a complementary lens to the quantitative results. While the statistical measures reveal patterns of coherence and collision, the qualitative review adds explanatory depth by examining the policy provisions, sectoral priorities, and institutional arrangements that underpin coherence or create contradictions. Together, the two approaches demonstrate not only where Zimbabwe's policy frameworks reinforce MFL elements, but also why overall consistency remains partial and uneven.

3.2.1. Overall Trends and Patterns

The qualitative assessment reinforces the patterns identified in the quantitative analysis while also explaining why overall coherence across Zimbabwe's policy system remains uneven. Figure 9 arranges the policy documents from the highest total alignment score at the top to the lowest at the bottom, which makes the variation in coherence within the policy space clear at a glance. Only a small number of policy frameworks achieve strong alignment across multiple MFL elements, with totals close to +10. Most of the documents fall within the +4 to +7 range, where integration is present but uneven. A smaller group score close to zero or below, indicating very weak alignment or direct collisions between the elements. This distribution illustrates that coherence exists within the policy environment but is not consistently reinforced or operationalized.

Across the policy set, *improving livelihoods* (orange) and *environmental sustainability* (blue) are the areas where policies most often align, with many documents expressing similar and generally positive commitments to these

[3]Unlike the quantitative analysis, the qualitative analysis deliberately covered all 26 policy and strategy documents, providing a complementary lens to the quantitative results.

goals. These appear frequently and with clear policy emphasis, reflecting long standing national commitments to food security, poverty reduction and climate resilience. This pattern is also evident in the quantitative analysis shown in Figure 6, where these two elements recorded the highest average coherence scores across the documents. While environmental sustainability is widely reflected, the depth of integration across other elements varies considerably.

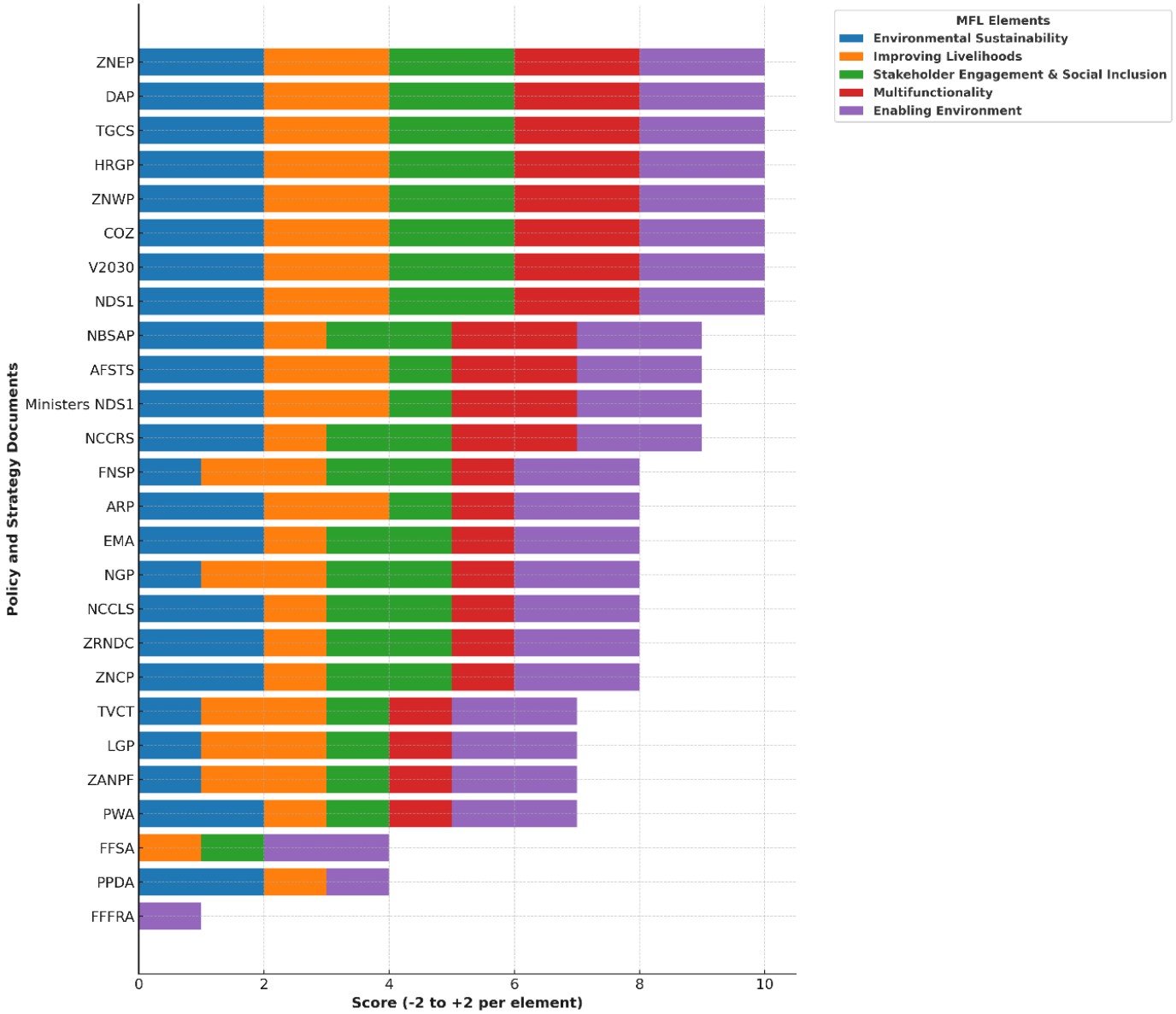

Figure 9: Comparative qualitative scoring of 26 policy and strategy documents against the five MFL elements

In contrast, *multifunctionality* (red) and *stakeholder engagement and social inclusion* (green) are referenced across the policy set but tend to be weakly operationalized. Where these elements appear, they are often expressed in general or aspirational terms, without clear guidance on how multiple landscape functions or stakeholder roles should be supported in practice. As a result, these elements score poorly in the qualitative coherence assessment shown in Figure 9. For example, in the Fertilizers, Farm Feeds and Remedies Act (FFFRA) and the PPDA, *multifunctionality* is largely absent in operational terms, as policy focus is placed primarily on production efficiency and regulatory control. Landscapes are therefore treated mainly as economic or administrative units rather than

interconnected ecological and social systems. The principle of managing landscapes to support multiple values and multiple users has not yet been fully embedded in policy design.

The *enabling environment* (purple) shows significant variation across the documents. High level strategic frameworks such as the Vision 2030 and the NDS1 (2021-2025) provide relatively clearer institutional direction and coordination roles. However, many sector-specific policies provide limited guidance for joint implementation, shared accountability or cross-ministerial decision making. This variation reflects the very low Kendall W statistic of 0.11 in the quantitative results (see Figure 6), which indicates weak agreement across policies on how coordination should be structured and supported.

Although most policies and strategies align on *environmental sustainability* (blue), some patterns of inconsistency emerge across documents. Policies such as the ZNCP (2017) and NDC (2021) express strong commitments to climate resilience and sustainable resource management. However, other frameworks, such as the HRGP (2020), promote agricultural expansion in ecologically sensitive areas, creating clear inconsistencies with the wetlands policy. This shows that while environmental sustainability is widely recognized and positively framed across the policy environment, it is not consistently translated into land use and implementation decisions. This explains why the quantitative analysis records both strong emphasis and recurring collisions within this element.

Overall, the qualitative results show that Zimbabwe's policy space contains important conceptual foundations for integrated landscape governance. However, practical alignment remains fragmented, and the degree of coherence depends on how priorities are framed, where mandates sit and whether mechanisms exist to link sectors during implementation. These tensions become more visible when the analysis is disaggregated by policy domain in the sections that follow.

3.2.2. Sectoral and Thematic Findings

As outlined in the methods, the policy and strategy documents were grouped into four domains: agriculture and food systems, water and natural resources, climate and environment, and integrated development and governance frameworks. The qualitative assessment of these clusters highlights how patterns of coherence and collision play out in different sectors, and how these findings align with or differ from the quantitative results.

a) Agriculture and Food Systems

The agricultural cluster reflects both drive and contradiction as reflected in Figure 10. Several recent or strategic frameworks score consistently and strongly across all five elements. The Draft Agroecology Policy (DAP, 2021-2023), the Draft Traditional Grains Commercialization Strategy (TGCS, 2021), and the HRGP (2020) all display +2 across most or all dimensions, shown in dark green. These policies explicitly integrate environmental sustainability, livelihoods, stakeholder participation, multifunctionality, and enabling conditions. This alignment explains why agriculture contributes some of the highest coherence scores in the quantitative analysis.

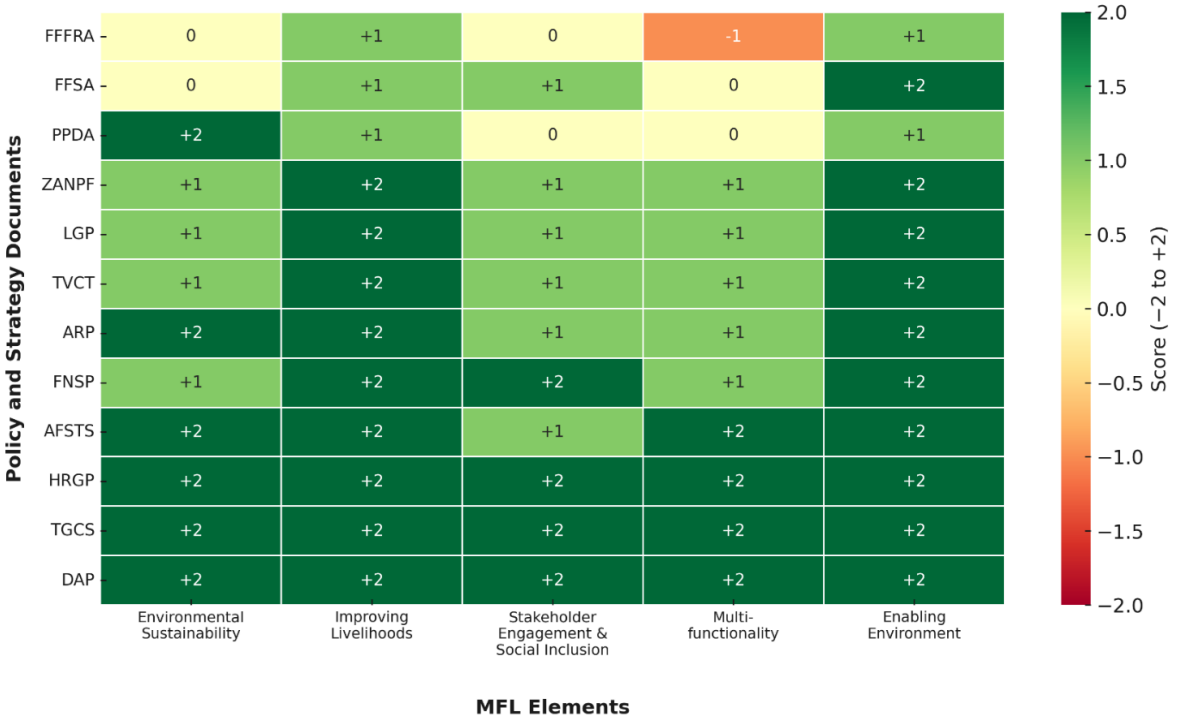

Figure 10: MFL element scores for agriculture and food system documents

Other strategy documents show mixed performance. Productivity-driven strategies such as the Livestock Growth Plan (LGP, 2021-2025) and the Tobacco Value Chain Transformation Plan (TVCTP, 2021-2025) demonstrate strong emphasis on livelihoods and enabling environments (+2) but show weaker support for stakeholder engagement and multifunctionality, where scores tend to remain at +1. These frameworks support economic growth and export targets but place less emphasis on inclusive participation or the broader ecological functions of landscapes.

In contrast, older regulatory documents such as the FFFRA and the Food and Food Standards Act (FFSA) score significantly lower. Their cells are pale or yellow, with scores of 0 across key MFL dimensions, and in the case of FFFRA, a –1 for multifunctionality. These policies largely focus on technical control and compliance, with minimal recognition of livelihood needs, social inclusion, or landscape-scale ecological interactions.

Collectively, these results show that while the core of the agricultural policy setting is evolving toward more integrated and sustainability-oriented approaches, older regulatory regimes and production-oriented strategies still anchor the system in narrower priorities. This combination explains why agriculture appears moderately coherent overall in the quantitative findings yet continues to generate trade-offs between production expansion and ecological or social outcomes, as also reflected in the collision patterns shown in Figure 6.

These patterns of mixed alignment are also reflected in how specific agricultural policies interact with environmental and climate frameworks. For example, the HRGP (2020) promotes irrigation expansion and intensified production, which can conflict with the wetlands policy that restricts cultivation in ecologically sensitive areas. Likewise, the LGP (2021-2025) prioritizes herd expansion without corresponding provisions for rangeland regeneration highlighted in the ZNEP (2009). Climate commitments articulated in Zimbabwe's NDC (2021) also sit uneasily with the TVCTP (2021-2025), given that tobacco curing continues to drive deforestation. These examples illustrate the concrete policy contradictions underpinning the trade-offs observed in the agriculture domain.

b) Water and Natural Resources

The water and natural resources cluster reflects strong yet uneven coherence across the two policies assessed (Figure 11). The ZNWP (2012) shows consistently high alignment across all MFL elements, with dark green scoring (+2) for environmental sustainability, livelihoods, stakeholder engagement and social inclusion, multifunctionality, and enabling environment. This indicates that the policy explicitly recognizes the need to balance resource protection with livelihood needs, participation, and coordinated decision-making, aligning closely with the elements of MFL management.

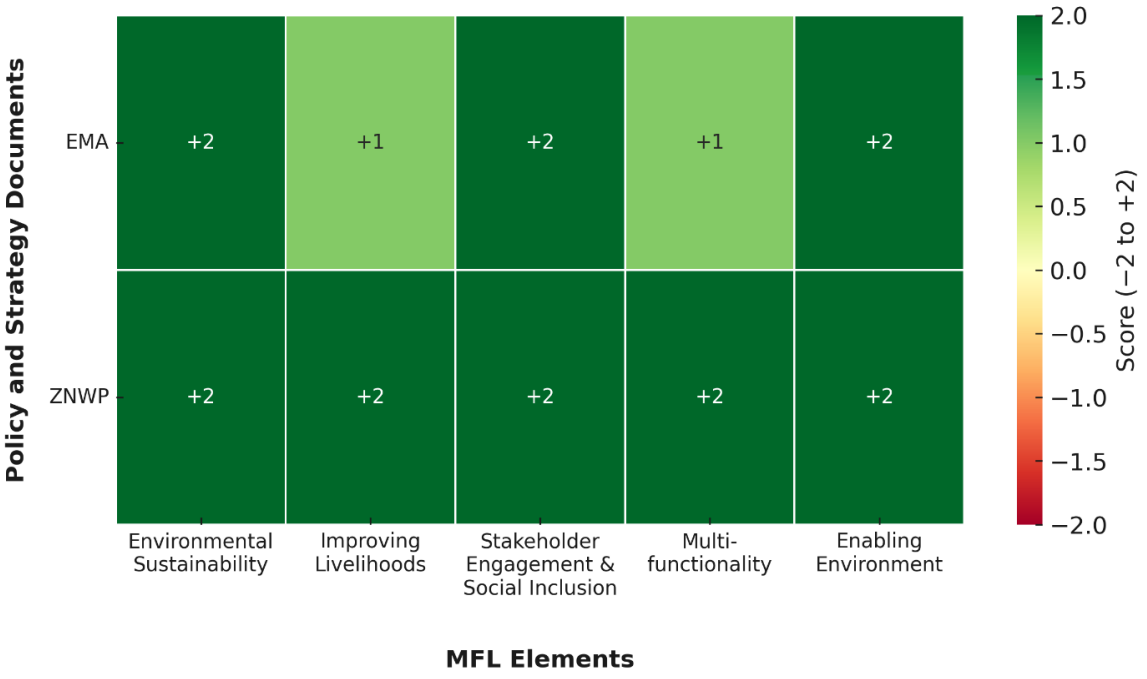

Figure 11: MFL element scores for water and natural resource documents

By comparison, the EM Act shows a strong but more selective pattern. It records +2 for environmental sustainability, stakeholder engagement and social inclusion, and enabling environment, reflecting its firm regulatory role in environmental protection and coordination. However, its +1 scores for improving livelihoods and multifunctionality indicate that while the Act establishes strong environmental safeguards, it provides more limited guidance on how these should connect to livelihood improvement or integrated land and resource use. The focus remains largely regulatory rather than development oriented.

Although no negative scores appear in the water and natural resources cluster, tensions may arise when implementation intersects with other sectors, particularly agriculture. For example, agricultural expansion initiatives often increase pressure on water demand, potentially conflicting with sustainability priorities reflected in both policies. These tensions are not always explicit in individual documents but become evident when examining the wider policy environment, and they help explain the recurring sustainability collisions identified in the quantitative analysis (Kendall's W ≈ 0.2–0.3).

Overall, the water cluster shows that while strong foundations for sustainable resource governance exist, coherence depends on how water-related priorities are coordinated with other sectoral strategies in practice.

A closer examination of water-agriculture interactions highlights several concrete contradictions. The Agriculture and Food Systems Transformation Strategy (AFSTS, 2020-2030) promotes expanded irrigation and intensified production, which can strain water availability and run counter to the ZNWP (2012) requirements for maintaining ecological flows and protecting catchments. Increased abstraction for agricultural schemes may also conflict with the EM Act emphasis on regulated resource use and ecosystem protection. These contradictions illustrate how water-related priorities can be undermined when agricultural expansion and environmental safeguards are applied simultaneously, generating sustainability collisions across sectors.

c) Climate and Environment

The climate and environment cluster shows the strongest overall coherence across the policy environment (Figure 12). Most of the documents in this group display consistently high alignment with MFL elements. The ZNWP (2012), NDC (2021), the NBSAP (2014) and the National Climate Change Response Strategy (NCCRS, 2015) all record +2 scores across multiple MFL elements, particularly in environmental sustainability, stakeholder engagement and social inclusion, and the enabling environment. These results reflect a clear policy emphasis on climate resilience, ecosystem protection, and coordinated institutional arrangements, which is consistent with the stronger coherence values observed in the quantitative analysis (Kendall's W ≈ 0.37 in Figure 5).

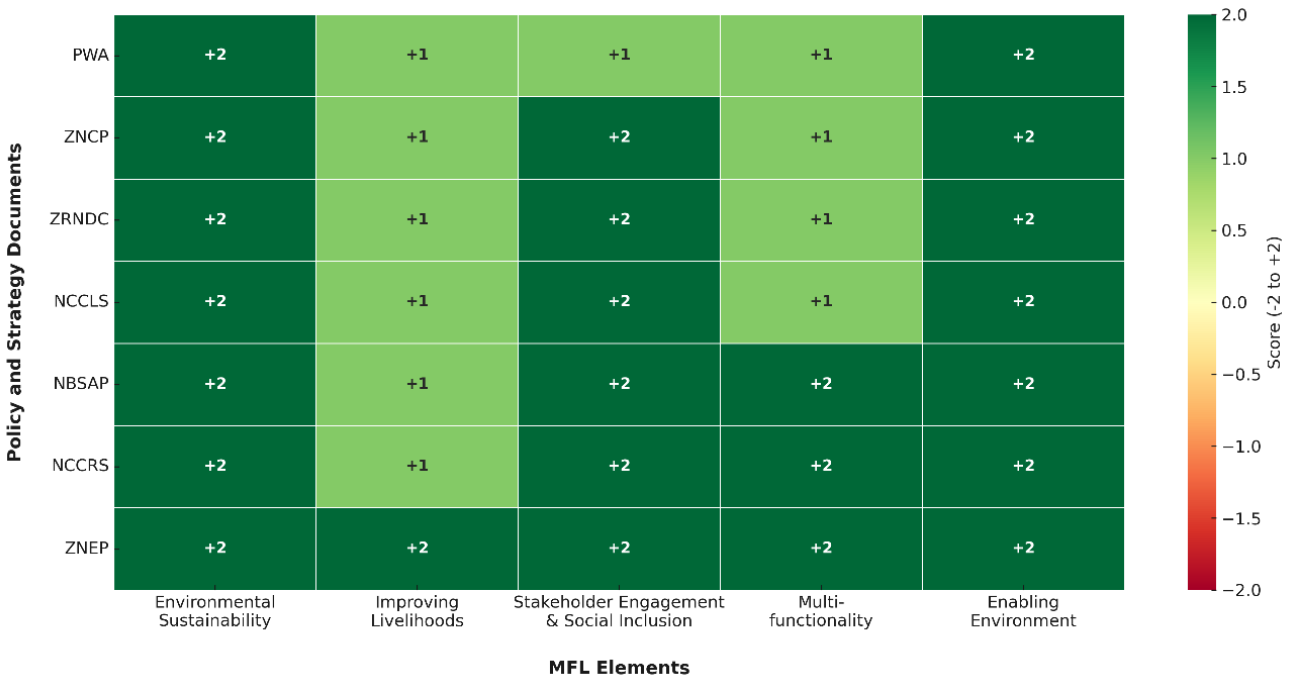

Figure 12: MFL element scores for climate and environment documents

At the same time, variation within the cluster remains evident. Frameworks such as the ZNCP (2017), NDC (2021), and the NCCLS (2020) show lighter green (+1) scores for improving livelihoods and multifunctionality. This indicates that while these policies strongly articulate sustainability and coordination, they place less emphasis on linking climate action directly to livelihood enhancement or to the management of landscapes for multiple uses and benefits. In contrast, the NBSAP (2014), the NCCRS (2014), and the ZNEP (2009) show stronger multifunctionality (+2), reflecting more explicit recognition of biodiversity conservation, social inclusion, and integrated land stewardship.

This pattern becomes more significant when considered in relation to other policy domains. While climate and environmental policies promote ecological resilience and sustainability, several agriculture and productivity-focused strategies (discussed in the Agriculture and Food Systems theme above) emphasize intensification and input-driven growth, which can place pressure on ecosystems and natural resources. This tension does not appear as direct negative scoring within the climate cluster but becomes visible in policy interaction during implementation. This dual profile helps explain why the climate and environment domain appears as the most coherent overall in the quantitative results, while environmental sustainability still shows recurring collisions across the broader policy environment (shown in Figure 7).

These interactions highlight several specific contradictions. While Zimbabwe's NDC (2021) commits the country to reducing deforestation and restoring degraded landscapes, the TVCTP (2021-2025) continues to rely on wood-fuel-intensive curing. Similarly, agricultural intensification strategies encouraging expansion into marginal or ecologically sensitive areas can undermine biodiversity protection priorities in the NBSAP (2014). These examples show how strong internal coherence within the climate domain can nonetheless collide with productivity-driven approaches in other sectors.

d) Integrated Development and Governance Frameworks

The integrated development and governance cluster reflects broad, system-level commitments to coherence, though the depth of integration varies across documents (Figure 13). The Vision 2030 and the NDS1 (2021-2025) show consistently strong alignment across all five MFL elements, with dark green scoring (+2) throughout.

These frameworks articulate clear commitments to coordinated governance, inclusive economic growth, and sustainable resource use. The Constitution of Zimbabwe similarly demonstrates comprehensive alignment, embedding elements of social inclusion, environmental stewardship, and shared responsibility for natural resources. Together, these high-level frameworks form a strong conceptual foundation for integrated landscape governance.

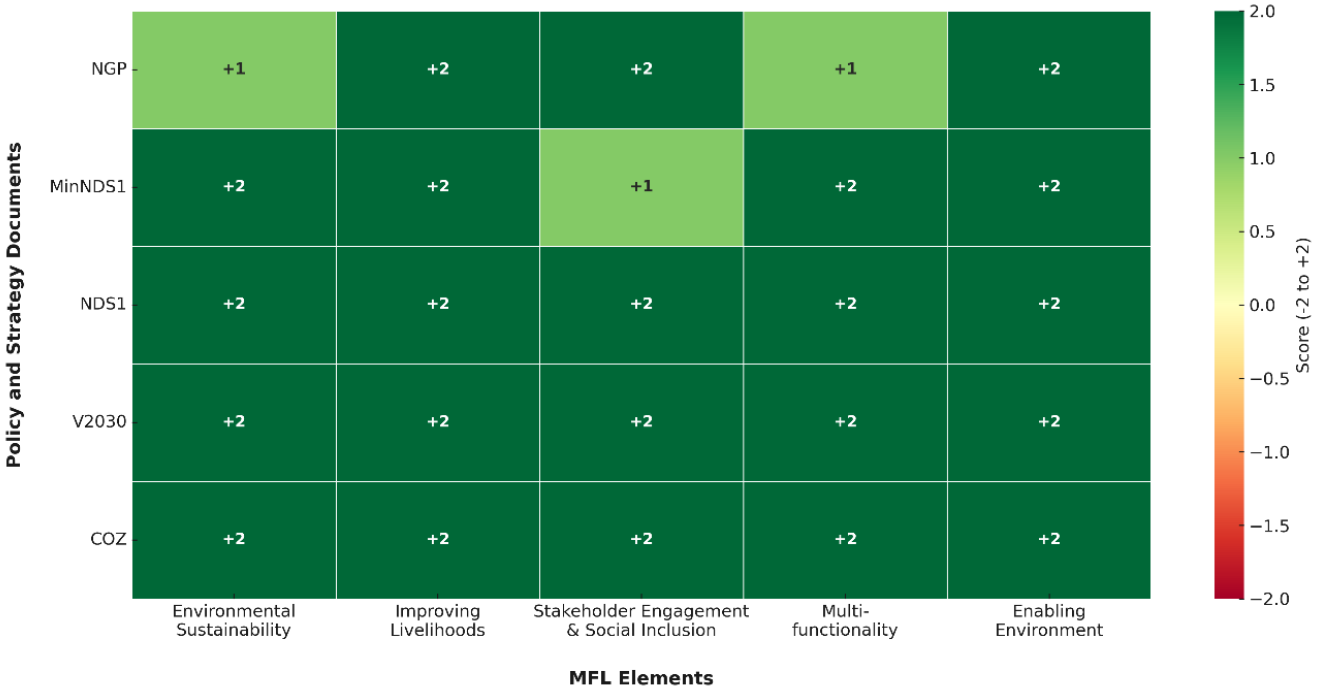

Figure 13: MFL element scores for integrated development and governance frameworks

In contrast, the NGP (2013) presents selective coherence. While it strongly supports improving livelihoods and stakeholder engagement and social inclusion (+2), it gives less emphasis to environmental sustainability and multifunctionality (+1). This indicates that gender equality priorities are well established, but their integration with ecological dimensions of landscape management remains limited. A similar pattern is evident in the Minister's NDS1 Action Plan (2021-2025), which aligns strongly on livelihoods and the enabling environment (+2), but shows weaker provisions for inclusion (+1). These differences illustrate that alignment at the strategic level does not always translate into consistent integration across sectoral implementation frameworks.

Overall, this domain highlights a familiar pattern within the policy space: coherence is most visible in high-level strategies, where broad development visions are articulated, but becomes uneven when translated into operational and sector-specific instruments. This is consistent with the quantitative findings, where enabling environment and social inclusion recorded lower levels of agreement across policies (Kendall's W ≈ 0.11-0.13) (see Figure 5).

Several governance-related contradictions become evident when these high-level commitments are compared with sector strategies. While the Vision 2030, NDS1 and the Constitution emphasize coordinated institutions, inclusive development, and sustainable resource use, productivity-focused strategies such as the LGP (2021-2025) and the TVCTP (2021-2025) do not fully integrate these elements. The Environmental Management Agency (EMA), established under the Environmental Management Act (EM Act) and the Zimbabwe National Water Authority (ZINWA), established under the ZINWA Act, (1998) create parallel responsibilities for water quality regulation, despite national commitments to unified governance. These examples illustrate how strong strategic intent at national level can be weakened by fragmented implementation responsibilities across sectors and agencies.

3.2.3. Sectoral cross-domain patterns

Across domains, the qualitative results confirm and help explain the quantitative patterns. Climate and environment frameworks demonstrate the strongest coherence, with most documents scoring consistently high across elements. Agriculture and governance frameworks occupy the middle ground, showing drive in some areas but fragmentation in others. Water policies display the weakest performance, reflecting narrower mandates and more uneven integration.

Collisions are concentrated around environmental sustainability and stakeholder engagement and social inclusion. Agriculture and water show the sharpest contradictions, with several policies recording weak or even negative scores on these dimensions. By contrast, livelihoods and sustainability emerge as the most common points of convergence across the portfolio, although sustainability also exhibits recurring collisions when policies interact across sectors. Multifunctionality and stakeholder engagement and social inclusion, meanwhile, persist as systemic blind spots, remaining weakly integrated across most policy domains.

The climate and environment policies cluster at the upper end of coherence, with deep green cells marking strong integration across multiple elements (Figure 12). In contrast, agriculture and water policy frameworks display greater variability, with lighter greens, yellows, and occasional orange cells highlighting gaps and collisions. Integrated development frameworks fall between these extremes: they embed enabling environment and inclusion more consistently but show weaker performance on sustainability and multifunctionality.

Figure 14 adds further perspective by ranking MFL elements within the policy space. The enabling environment records the highest average score (1.92), showing that governance arrangements and institutional frameworks are strongly articulated in policy texts. Environmental sustainability (1.65) and improving livelihoods (1.62) follow closely, consistent with their prominence in both analyses. By contrast, stakeholder engagement and social inclusion (1.54) average lower, and multifunctionality (1.31) is the weakest element, confirming that few policies adopt genuinely

integrated approaches across food, water, land, and ecosystems. Notably, this varies from the quantitative analysis, where enabling environment appeared weaker and less coherent (see Figure 5). The qualitative review therefore highlights a gap: enabling conditions are clearly expressed in individual policy texts but lack consistent integration with other elements at the system level.

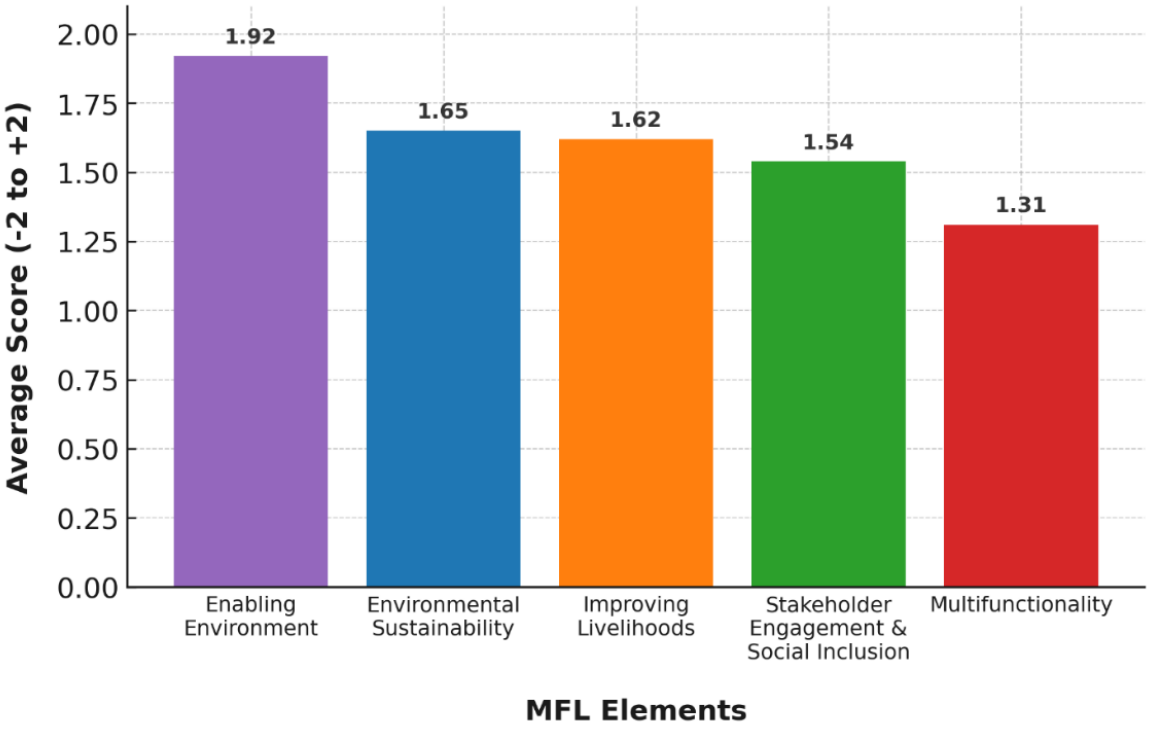

Figure 14: Average MFL element scores across all policies

The sectoral and element-level analysis shows that Zimbabwe's policy environment includes strong frameworks for coherence, particularly in climate and governance. Yet these strengths are undermined by frequent collisions in sustainability and inclusion and by the persistent neglect of multifunctionality. The alignment between the two approaches strengthens confidence in the findings, while their differences highlight why coherence across the system remains partial and uneven.

3.3. Linking Policy to Practice: Insights from the Mbire Validation Workshop

Building on the process described in Section 2.5, the Mbire workshop brought together farmers, traditional leaders, and local government representatives to reflect on how national policies function in practice. The discussions helped ground the findings from the policy coherence study, revealing how institutional gaps, competing priorities, and weak coordination influence development outcomes within the district.

3.3.1. Findings from the Workshop

Participants confirmed that the patterns identified in the national policy analysis mirrored local conditions. They recognized strong alignment between environmental and climate-related policies, moderate alignment between water and agriculture, and weak coordination in governance and implementation. One participant reflected, "*what you presented is exactly what we live every day*," affirming both the accuracy of the findings and the relevance of the MFL framework for explaining how policies on land, water, environment, and livelihoods interact in Mbire.

While national frameworks were seen as comprehensive, implementation was described as inconsistent due to overlapping institutional roles, limited resources, and insufficient local consultation.

The opening discussions illustrated how coherence and collision dynamics manifest in day-to-day governance. The Environmental Management Agency (EMA), the Forestry Commission (FC), the Zimbabwe Parks and Wildlife Management Authority (ZPWMA), and the Zimbabwe National Water Authority (ZINWA) were said to have overlapping mandates for environmental protection and water management. Participants explained that these institutions often operate in parallel, resulting in duplication, inconsistent enforcement, and blurred accountability. These institutional overlaps were seen to weaken coordination downstream, particularly at the point where national policies are translated into district-level planning and implementation.

They also noted that the emphasis on environmental protection, though necessary, frequently clashes with livelihood realities. Cultivation along riverbanks is prohibited to protect catchments, yet viable irrigation options in upland areas remain scarce. For many smallholders, streambank farming becomes a survival strategy during dry periods, illustrating the persistent tension between conservation objectives and livelihood or food production needs.

These tensions are exacerbated by gaps in local governance and planning processes. Policy formulation and planning were described as overly centralized, with minimal representation from Ward and Village Development Committees (WADCOs and VIDCOs), which are statutory local governance structures mandated to coordinate development planning and facilitate community participation at ward and village levels. Due to chronic resource constraints, these structures were described as under-resourced, inactive, and often unable to participate meaningfully in planning processes. As a result, feedback between local actors and higher levels of decision-making remains weak, limiting the inclusion of grassroots perspectives and reinforcing the governance misalignments identified in the national policy analysis.

The plenary discussions stressed that these challenges have direct consequences for how people farm, graze their animals, and manage natural resources. Wildlife management was seen as favoring conservation goals over local wellbeing, with many pointing to the lack of compensation for crops and livestock losses caused by protected species. Participants also observed that councilors occupy political roles and, because they are elected, they may be reluctant to convey feedback that could be viewed as unfavorable by their constituents. Similarly, they may hesitate to enforce certain environmental by-laws when these are unpopular among communities that depend on riverbank gardens, forests, and other natural resources for survival. These political sensitivities were highlighted as further contributing to misalignments between policy intent and practice, particularly where enforcement intersects with livelihood pressures.

Following the plenary, participants worked in mixed groups of farmers, councilors, traditional leaders, and technical officers to explore these challenges further. Group discussions were guided by questions linking policy to local experience, focusing on which programs are most helpful, where mandates overlap, how coordination can be improved, and what actions could strengthen policy implementation in Mbire.

Across the groups, both supportive and conflicting policy experiences emerged. Programs such as Pfumvudza, the Presidential Borehole Scheme, nutritional gardens, livestock vaccination campaigns, and Village Business Units (VBUs) were widely credited with improving productivity and income. Water was consistently identified as the thread linking most successes and challenges. When boreholes fail or wells dry up, farmers lose access to irrigation, watering points for livestock, and household water supply. This dependence on fragile water systems revealed the limits of otherwise strong agricultural initiatives, which often falter due to poor maintenance, weak coordination, or unclear ownership responsibilities.

Human-wildlife conflict was another dominant theme. Crop destruction by elephants and hippos along the Angwa river, livestock predation, and damage to community water points were described as daily challenges that compromise both safety and food security. The absence of compensation or protection mechanisms was viewed as a major policy gap requiring urgent attention.

Participants also called for a shift in mindset, centered on awareness and collaboration rather than punishment. As one farmer explained, "*we cannot impose laws on people; they must see the benefit of following them."* This is akin to 'sticks' versus 'carrots' in policy incentives. Others added that current conservation approaches often appear to "*protect wildlife but not people*," reflecting frustration with models that fail to balance ecological and livelihood priorities, and between food production and conservation.

Finally, participants emphasized the importance of inclusive participation and meaningful feedback in decision-making. Participants observed that national policies often fall short because communities are informed rather than genuinely engaged in decision-making. Several participants called for more direct interaction between policymakers and local actors, noting that ward committees, traditional authorities, and women's and youth groups could play a stronger role in linking community priorities with higher-level planning and improving coordination across land, water, and environmental governance.

4. Implications for MFL Transformation

The analysis and validation highlight key implications for Zimbabwe's ability to advance MFLs. While national policies articulate strong commitments to livelihoods and sustainability, and have expressed intentions around enabling conditions, persistent contradictions and institutional overlaps continue to constrain progress toward integrated and resilient landscapes.

Uneven policy integration: Coherence varies significantly across policy domains. Climate and environmental policies demonstrate relatively strong alignment, but these are not consistently reinforced within agriculture, water, or governance frameworks. Opportunities for synergy are frequently missed. In Mbire, this disconnect was visible where agricultural and water programs often operated independently despite pursuing similar goals for food security and resilience. Water emerged as the most critical connector, as its availability and management determine whether agricultural, environmental, and livelihood outcomes succeed or fail.

Tensions between growth and sustainability: Growth-oriented frameworks in agriculture and water frequently conflict with conservation and resilience objectives. For instance, policies restricting streambank cultivation to protect catchments often lack viable livelihood alternatives such as upland irrigation alternatives, forcing farmers to choose between compliance and survival or between food production and conservation. These trade-offs show how policy collisions manifest in practice, undermining both ecological integrity and social wellbeing.

Weak inclusion and participation: Limited and uneven attention to equity and local participation reduces the legitimacy of MFL implementation, reinforcing the systemic blind spots identified in the policy analysis. Policies that treat inclusion as a secondary issue risk deepening exclusion, especially for women and youth. The validation workshop further revealed that Ward and Village Development Committees often lack the resources, authority, and consistent representation needed to effectively link communities with government institutions. Their limited operational capacity combined with political sensitivities that influence how councilors convey community feedback and enforce by-laws, weakens accountability and restricts genuine grassroots participation.

Opportunities for coordination and reform: Despite challenges, there are strong entry points for improving coherence. Frameworks such as the *Vision 2030* and the NDS1 (2021-2025) already provide a foundation for governance reform and cross-sectoral planning. The Mbire validation workshop showed that local actors are ready to operationalize these elements, if and when, coordination, information flow, and water access are strengthened. Strengthening collaboration among agencies such as Environmental Management Agency (EMA), Zimbabwe Parks and Wildlife Management Authority (ZPWMA), Zimbabwe National Water Authority (ZINWA) and the Forestry Commission (FC) will be important for turning policy intent into implementation.

These implications demonstrate that Zimbabwe's policy domain is not lacking in intent but in integration. Translating coherence from policy to practice depends on how effectively national ambitions connect with local realities through coordination, participation, and investment in water security. These insights underpin the conclusions presented in the next section.

5. Conclusion

The findings show that Zimbabwe's policy environment provides a strong foundation for the transition toward MFLs. Climate and environmental policies embed solid elements of sustainability, resilience, and livelihoods, and demonstrate relatively stronger coherence than other policy domains across both the quantitative and qualitative analyses. However, this coherence does not extend evenly to agriculture, water, or governance frameworks, where sectoral silos, contradictory incentives, and uneven integration persist, weakening the consistency of policy intent across the system. The validation workshop in Mbire demonstrated that these challenges are not abstract but shape daily decisions on farming, water use, and environmental management. Participants recognized that the analytical findings reflected their lived realities, affirming the value of the MFL framework in connecting production, conservation, and inclusion. They also emphasized that environmental protection measures, while necessary, frequently conflict with livelihood realities particularly in areas with limited alternative livelihoods such as irrigation options, forcing farmers to rely on streambank cultivation as a survival strategy during dry periods. These dynamics highlight the persistent tension between conservation objectives and the production and livelihood needs of smallholder farmers, illustrating how coherence at the policy level often weakens during implementation due to overlapping mandates, fragmented responsibilities, and limited local resources.

These tensions are compounded by institutional constraints. WADCOs and VIDCOs were described as under-resourced, inconsistently active, and often minimally represented due to chronic resource shortages, limiting their ability to channel grassroots perspectives into district and national policy processes. Participants further noted that councilors, as elected representatives, face political sensitivities that influence how they convey community feedback and enforce by-laws, particularly where regulations are unpopular or conflict with immediate livelihood needs. These dynamics weaken vertical accountability and contribute to misalignments between policy intent and practice.

Water remains the central link tying coherence together across sectors. Its governance, availability, and maintenance influence whether agricultural, environmental, and livelihood objectives are achieved. When boreholes fail or rivers dry, weaknesses in coordination, infrastructure, and accountability become visible. Strengthening water security and integrated water-land planning is therefore essential for grounding MFL implementation in practical realities.

Social inclusion also remains an area of weak coherence. Despite strong commitments in policy, women, youth, and marginalized groups continue to have limited influence in decision-making processes. Structural barriers such as resource limitations in local institutions, weak representation, and uneven information flows restrict meaningful participation and limit the ability of communities to shape landscape governance.

Ultimately, these findings indicate that the vision for MFLs is not new to Zimbabwe. The elements of balancing productivity, sustainability, and inclusion have long been part of the country's development agenda. The central challenge lies not in the vision itself but in translating ambition into coherent, context-sensitive implementation that addresses coordination gaps, strengthens local institutions, and resolves persistent conservation livelihood tensions. Strengthening the enabling environment through inter-agency collaboration under a one-government approach (Marenya et al., 2025), combined with investment in water security and genuine inclusion at every level, will be vital to achieving this goal.

6. Recommendations

Advancing MFLs in Zimbabwe now requires shifting beyond analysis toward practical measures that strengthen policy coherence across sectors and scales. The recommendations below identify actions that can reduce policy collisions, close gaps in inclusion and multifunctionality, and translate existing commitments into integrated practice. These measures target system-wide reforms and sector-specific entry points, offering a pathway toward more resilient, inclusive, and sustainable landscapes.

1. I**mprove policy coherence at national and sub-national levels**

- Ensure that national frameworks are consistently reinforced across agriculture, water, climate, and development strategies, and that sub-national governments are provided with clear guidance, budgets, and technical support to translate them into practice. This can be achieved by introducing harmonized cross-sector planning guidelines, joint review processes across ministries, and costed implementation toolkits for districts that clarify roles, timelines, and accountability.
- Promote vertical alignment so that provincial and district plans reflect national objectives for livelihoods, sustainability, and inclusion, while allowing flexibility to adapt to local realities identified through validation exercises such as the Mbire workshop.

2. **Identify priority areas for policy reform and harmonization**

- Address contradictions between productivity-driven measures and ecological safeguards by revising sectoral strategies to embed sustainability as a guiding principle.
- Integrate multifunctionality explicitly so that policies move beyond sectoral silos and recognize the interdependence among food systems, water management, land use, and ecosystems.
- Strengthen commitments to gender and youth inclusion by setting measurable targets, allocating dedicated resources, and embedding accountability across all sectors.

3. **Strengthen coordination mechanisms across sectors and levels**

- Empower existing coordination bodies with clear mandates, joint workplans, and dedicated resources to facilitate cross-sectoral planning and implementation.
- Institutionalize inter-agency working groups and harmonize monitoring systems that track coherence in implementation, not only in policy texts. This includes establishing or strengthening cross-ministerial coordination platforms, routine joint planning and review meetings, and shared monitoring indicators across agriculture, water, environment, and local government sectors.
- Establish feedback loops that allow coordination platforms to identify and resolve emerging policy collisions, drawing on local evidence and community feedback.

4. **Reinforce local dialogue and learning platforms**

- Expand the role of community forums, farmer organizations, traditional leadership structures, and civil society networks in shaping sectoral priorities and monitoring progress.
- Ensure that participation is meaningful rather than symbolic, with local knowledge and lived experiences feeding directly into planning, budgeting, and review processes.
- Leverage existing platforms such as Ward and Village Development Committees as spaces for joint learning and accountability, supported by national partners.

- Promote awareness and collaboration between government agencies and communities so that environmental and water regulations are understood, supported, and implemented through shared responsibility rather than through reliance on punitive enforcement. Building trust through dialogue will strengthen local ownership of natural resource management practices.

5. **Leverage climate and environment frameworks as anchors for alignment**

- Use existing commitments on climate resilience and environmental sustainability as entry points for cross-sectoral integration, linking agricultural, water, and development policies to a shared vision for sustainable transformation.
- Position MFL transformation as a long-term policy evolution that aligns with national priorities and global commitments to resilience, inclusion, and sustainability.

Moving from fragmented goals to integrated practice will require linking Zimbabwe's strong policy foundations with consistent attention to multifunctionality, inclusion, and coordination. The Mbire validation workshop demonstrated that communities, local authorities, and technical departments are ready to work collaboratively when policies are coherent and implementation is adequately resourced. If these actions are prioritized, Zimbabwe can advance MFLs that deliver food security, ecological resilience, and inclusive development in line with national aspirations and global sustainability goals.

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