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KING'WAL WETLAND TRANSFORMATION AND SUSTAINABLE MANAGEMENT

Pathways for a Resilient Future

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Acronyms and Abbreviations

ACTS	African Centre for Technology Studies
CBOs	Community-Based Organisations
ICF	International Crane Foundation
KFS	Kenya Forest Service
KWS	Kenya Wildlife Service
NEMA	National Environment Management Authority
NGOs	Non-Governmental Organisations
NLC	National Land Commission
PPPs	Public-Private Partnerships
T-Lab	Transformation Laboratory
WRUA	Water Resources Users Association
WRA	Water Resources Authority

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Executive Summary

The King'wal Wetland management plan envisages ecosystem restoration and a sustainably managed wetland, supported by stronger institutional, human, and governance capacity, improved compliance with legislation, and the promotion and scaling up of entrepreneurship and income-generation activities around the wetland. Despite this, much is still needed to realise meaningful transformation. Reflections on the multiple perspectives raised by participants during the first Transformation Laboratory (T-Lab) workshop created the opportunity to frame the problems and challenges, and to collaboratively generate strategic options for consideration. The workshop also strengthened participants' ability to reflect on the current state of the wetland, envision a desired future, and identify early intervention opportunities across a diverse range of possible futures.

The second T-Lab was held over two days, 7–8 May 2026, at Allen's Hotel in Nandi County, and brought together around 25 participants, including local wetland resource users, national and county government agencies, community-based organisations, NGOs, and researchers from partner universities.

Building on the five seeds of change identified during the first T-Lab, the second T-Lab identified additional priorities for the wetland's transformation. These included multisectoral enforcement and regulation, indigenous knowledge for conservation, inclusive conservation initiatives, mainstreaming conservation in school curricula, private-sector partnerships, research and the involvement of knowledge institutions, identification of areas where early restoration results can be demonstrated and learned from, and the identification and responsible development of ecotourism potential.

Community participation was consistently recognised as essential for sustainable wetland management. Awareness creation, community mobilisation, inclusive conservation initiatives, and local stewardship emerged repeatedly across thematic areas and prioritised actions. Participants viewed local ownership not simply as participation in conservation activities, but as a necessary foundation for strengthening accountability, behavioural change, and long-term sustainability.

Continuous monitoring and review of the current wetland management plan, aligned with the seeds and priorities identified through the T-Lab process, will go a long way toward realising sustained transformational change in the sustainable use of wetland resources.

1. Background

King'wal Wetland is a small riverine wetland of approximately 2.73 km² located in Nandi County (MERM, 2012). The wetland provides important ecosystem services that support local livelihoods and biodiversity conservation, including habitat for the rare, nationally endangered Sitatunga (*Tragelaphus spekii*) and the globally endangered Grey Crowned Crane (*Balearica regulorum*). The wetland also sustains surrounding communities through agriculture, livestock grazing, papyrus harvesting for handicrafts, and emerging livelihood opportunities linked to conservation and ecotourism.

Despite the wetland's ecological and livelihood importance, King'wal Wetland continues to experience increasing pressure and ecological degradation, threatening the biodiversity and livelihoods that depend on the wetland. These challenges are driven by human activities and climate change, including agricultural encroachment, habitat degradation, recurrent fires during the dry season, high sediment loading from the catchment, frequent flooding during the wet season, human-wildlife conflict, and eucalyptus invasion. The situation is further compounded by unclear land tenure around the wetland, which makes it difficult to delineate wetland boundaries and clarify institutional mandates, as well as weak sectoral policy enforcement and fragmented institutional coordination. These pressures and governance challenges undermine effective wetland conservation and long-term ecosystem sustainability (Kipkemboi et al., 2007).

The growing complexity of environmental governance challenges has highlighted the importance of participatory and systems-oriented approaches to natural resource management and conservation planning. Folke et al. (2005) explain that socio-ecological systems are shaped by interconnected ecological, social, political, and institutional dynamics that require collaborative and adaptive governance approaches. Participatory processes that bring together communities, government institutions, researchers, and other stakeholders are increasingly recognised as important spaces for social learning, collective reflection, and the co-development of locally grounded solutions to environmental challenges (Reed et al., 2010).

King'wal Wetland has increasingly become a contested socio-ecological landscape where conservation priorities, livelihood needs, governance systems, and land-use pressures intersect. The complexity of these challenges highlights the need for integrated approaches that move beyond sectoral conservation interventions toward more collaborative and locally grounded governance processes. Sustainable wetland management requires not only ecological restoration, but also strengthened institutional coordination, community participation, inclusive decision-making, and adaptive governance mechanisms capable of responding to changing environmental and socio-economic conditions (Folke et al., 2005).

The King'wal Second Transformation Laboratory (T-Lab) workshop was convened to reflect on progress made since the first T-Lab in 2024 and to strengthen stakeholder engagement, collective reflection, and collaborative action for the wetland landscape's future. The workshop brought together local wetland resource users; national government agencies (NEMA, KWS, NLC, and WRA); Nandi County departments responsible for agriculture, ecotourism, and environment; community-based organisations (King'wal Water Resources Users Association and King'wal Conservancy); NGOs (International Crane Foundation and Women in Water and Natural Resource Conservation); and researchers from universities and research institutions, including Egerton University, University of Eldoret, Kaimosi Friends University, Moi University, and the University of Eastern Africa Baraton. The Participants examined current pressures on the wetland and explored more sustainable, inclusive approaches to its management. The process served as a collaborative platform for systems thinking, shared learning, and transformation-oriented dialogue on the future of King'wal Wetland.

This synthesis report captures the key reflections, priorities, and transformation pathways that emerged from the workshop discussions and participatory processes. The report focuses on stakeholder perspectives on the key ecological, governance, livelihood, and conservation priorities shaping the future of King'wal Wetland. The synthesis also documents the priority actions identified by stakeholders, the implementation timelines developed during the workshop, and the broader governance and conservation challenges affecting sustainable wetland management. The synthesis therefore provides a consolidated analysis of the stakeholder-generated priorities, emerging opportunities, and strategic pathways identified for strengthening sustainable and inclusive wetland governance.

2. Workshop Approach

The King'wal T-Lab adopted a participatory and systems-oriented Transformation Laboratory (T-Lab) approach to support collective reflection, dialogue, systems analysis, co-creation, and action planning around the future of King'wal Wetland. The workshop was held over two days, 7–8 May 2026, at Allen's Hotel in Nandi County. The methodology combined systems thinking, collaborative learning, stakeholder engagement, and participatory decision-making to examine interconnected ecological, governance, and socio-economic dynamics. The process comprised reflection on the first T-Lab, the Three Horizons Framework, a Seeds of Change review, barriers and enablers analysis, stakeholder and power mapping, World Café discussions, dot-voting and prioritisation, action and indicator development, and roadmap/timeline planning.

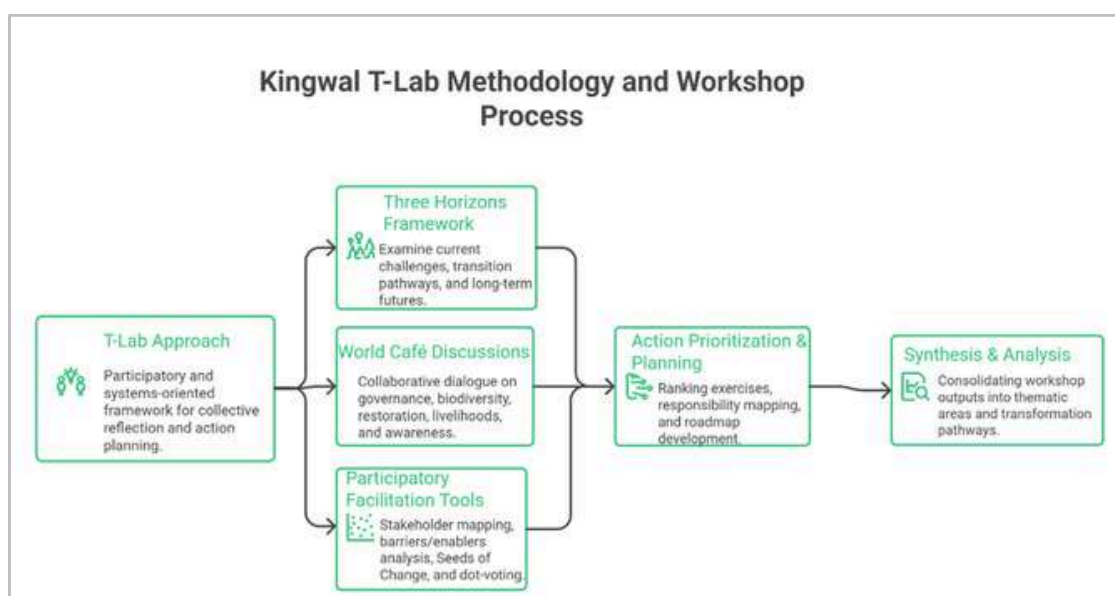


Figure 1: King'wal T-Lab process and methods employed in the workshop

Figure 1 illustrates the methodological sequence used to move from reflection and systems understanding to future visioning, prioritisation, and action planning. The process was deliberately iterative: outputs from one exercise were carried into the next, allowing participants to refine their understanding of the wetland system and progressively translate broad concerns into practical pathways.

The T-Lab approach brought together actors with different experiences, responsibilities, and interests in King'wal Wetland and created a shared space for dialogue, social learning, and co-creation. Participants collectively identified problems, assessed changes since the first T-Lab, explored alternative futures, and agreed on priority actions.

The Three Horizons Framework was used to structure temporal and transformational thinking. Horizon 1 focused on the current wetland system and the practices, pressures, and institutional conditions that participants considered problematic. Horizon 2 focused on transition processes, emerging innovations, and practical pathways that could help shift the system. Horizon 3 focused on the desired future, including restored habitats, stronger biodiversity protection, improved livelihoods, and more coordinated governance. This enabled participants to connect present realities with medium- and long-term change.

The Seeds of Change exercise revisited the five pathways identified during the first T-Lab: biodiversity protection, alternative livelihoods, governance coordination, community awareness, and boundary clarification. Participants assessed their current status, identified where progress was occurring, considered areas requiring further support, and identified additional seeds emerging from the current context. The exercise therefore served both as a progress review and as a mechanism for identifying new opportunities.

Barriers and enablers analysis was used to examine why desired changes had or had not occurred. Participants identified factors such as weak enforcement, unclear boundaries, land-tenure complexities, limited coordination, and livelihood pressures as barriers, while awareness creation, stakeholder collaboration, restoration initiatives, alternative livelihoods, and community stewardship were considered potential enablers. This helped explain the gap between desired transformation and observed implementation.

Stakeholder and power mapping was used to identify the actors who influence, implement, support, or are affected by wetland management. Participants considered government agencies, county departments, community organisations, conservation organisations, researchers, local leaders, private-sector actors, and resource users. The exercise helped identify where stronger coordination, clearer roles, knowledge exchange, and partnerships were needed.

World Café discussions provided a structured format for small-group dialogue across the priority themes. Participants moved between thematic discussions, building on ideas raised by other groups and refining possible actions. The method was used to deepen discussion on practical pathways, implementation considerations, and indicators.

Dot-voting and prioritisation were used to identify the actions and Seeds of Change that participants considered most important. Participants ranked options based on their perceived urgency, feasibility, and potential contribution to change. The highest-voted priorities were subsequently taken into action and indicator development and informed the roadmap.

Action and indicator development translated the prioritised pathways into practical interventions and measurable signs of progress. Participants identified actions such as awareness creation, boundary clarification, biodiversity protection, restoration, ecotourism development, and livelihood support, together with indicators such as people trained, sites identified, habitats restored, species protected, partnerships established, and outreach activities implemented.

Roadmap and timeline planning then organised the prioritised actions into short-term (0–6 months), medium-term (6 months–2 years), and long-term (over 5 years) horizons. Stakeholders also identified lead and supporting actors. The resulting roadmap provides a practical bridge between the participatory analysis and future implementation, monitoring, and review.



Figure 2: Participants during the King'wal T-Lab workshop at Allen's Hotel, May 2026

The methodology adopted during the workshop was an integrated process in which reflection informed systems analysis, systems analysis informed prioritisation, prioritisation informed action planning, and the resulting outputs were synthesised into the transformation pathways and action roadmap presented in this report. The two-day process was structured around reflection, systems understanding, future visioning, and action planning.

Day 1 focused on welcoming participants and revisiting the first T-Lab, reflecting on what had changed, revisiting the Three Horizons, reviewing Seeds of Change, mapping barriers and enablers, and undertaking stakeholder and power mapping. Day 2 began with a recap of Day 1 and moved into thematic World Café discussions, future visioning, priority action and indicator development, dot-voting and prioritisation, refinement of the action roadmap, sharing of group pathways and insights, documentation of learning, and agreement on next steps and commitments.

3. Workshop Outcomes

3.1 Understanding Change and Transformation Continuity in King'wal Wetland

This section examines how the King'wal wetland landscape has evolved since the earlier T-Lab engagement in 2024 by reflecting on areas where positive progress has emerged, challenges that continue to persist, and pressures that participants identified as emerging or intensifying (Table 1). The discussion provides insight into the interconnected ecological, governance, and socio-economic dynamics influencing the current condition of King'wal Wetland and the broader pathways for long-term transformation.

Table 1: Summary of positive changes, persistent challenges, and emerging/intensifying pressures in King'wal Wetland

Positive Changes	Persistent Challenges	Intensifying Pressures and Additional Concerns
Increased community awareness of wetland importance and conservation	Wetland encroachment for agriculture	Expansion and intensification of sugarcane cultivation along the wetland
Alternative livelihoods emerging	High sediment loading from the catchment causing siltation	Poisoning of wetland avifauna, particularly Grey Crowned Cranes (<i>Balearica regulorum</i>)
Reduced poaching of Sitatunga (<i>Tragelaphus spekii</i>)	Recurrent wild fires during the dry season	Increasingly intense flooding and associated risks
Ongoing wetland boundary mapping and community sensitization	Weak implementation of sectoral policies	Increasing infrastructure development around the wetland
Ongoing conservation research	Invasive eucalyptus spread	
Indigenous tree-planting initiatives in the buffer zones and catchment	Unclear wetland boundaries	
Government and NGO engagement	Unresolved private land-ownership complexities; water pollution and land fragmentation	
Community sensitization on wetland land tenure and mapping	Frequent flooding and siltation	

3.1.1 Positive Changes Observed in the Wetland Landscape

Several positive shifts are beginning to emerge within King'wal Wetland, particularly in relation to conservation awareness, restoration activities, and stakeholder engagement. Growing recognition of the ecological and socio-economic importance of the wetland among local communities, institutions, and conservation actors was identified as one of the most visible developments since earlier engagements within the landscape. Increased participation in conservation awareness activities, restoration discussions, and biodiversity protection initiatives was viewed as an encouraging sign of transformative action towards improving environmental consciousness among surrounding communities. Interest in alternative livelihood activities such as beekeeping and ecotourism was also identified as an important opportunity capable of reducing pressure on extractive wetland resource utilisation while strengthening household resilience. Ongoing restoration initiatives – including indigenous tree-planting activities in the catchment and buffer zones, biodiversity monitoring efforts, and habitat recovery interventions in selected sections of the wetland – were similarly highlighted as positive developments. Reduced poaching of Sitatunga (*Tragelaphus spekii*) in some areas was viewed as an important indication of improving conservation awareness and increased attention toward biodiversity protection within the landscape.

For clarity, actions described as indigenous tree planting refer primarily to suitable buffer-zone and catchment areas, while habitat restoration and biodiversity protection actions refer to the wetland and its ecologically sensitive areas. The roadmap therefore distinguishes between interventions within the wetland and those in the surrounding catchment or buffer that influence wetland condition.

The discussions further pointed to gradual improvements in institutional engagement around wetland governance and conservation planning. For example, community sensitisation on the planned commencement of wetland boundary mapping was identified as an important step toward improving wetland governance and increasing clarity around conservation areas. Increased collaboration between community groups, local leadership structures, conservation organisations, and government agencies was also viewed as a positive shift supporting restoration and awareness activities within the wetland landscape. However, participants cautioned that increased awareness and stakeholder engagement have not yet consistently translated into tangible ecological, livelihood, or governance outcomes at the scale required for transformation.

3.1.2 Persistent Challenges

Despite the positive developments identified during the discussions, several long-standing ecological and governance challenges remain largely unresolved. Encroachment into wetland areas through cultivation continues to affect large sections of the wetland. Recurrent fires, the spread of eucalyptus plantations, and continued habitat degradation were repeatedly identified as persistent ecological pressures limiting restoration progress within the landscape.

Implementation of conservation actions and restoration commitments was also described as inconsistent, despite increased awareness and repeated engagements around wetland protection. Weak enforcement of environmental regulations, unclear wetland boundaries, and unresolved private land-ownership complexities continue to affect restoration efforts and long-term conservation planning. While conversations around restoration and conservation have increased, institutional coordination and sustained implementation remain limited in several areas.

3.1.3 Intensifying Pressures and Additional Concerns

The discussions reaffirmed several longstanding pressures and highlighted a smaller number of pressures that participants considered to be increasing in scale or intensity. Expansion of sugarcane cultivation emerged as a particularly prominent concern because of its potential to accelerate land conversion and increase pressure on ecologically sensitive wetland areas. Participants also highlighted increasing infrastructure development, more intense flooding, and poisoning of wetland avifauna, particularly Grey Crowned Cranes (*Balearica regulorum*).

Water pollution and land fragmentation were also reaffirmed as continuing pressures. Participants noted that these persistent pressures, together with the intensifying concerns above, could further reduce ecosystem resilience if not addressed through coordinated management.

Limited information and insufficient monitoring data on ecological and socio-economic dynamics in some sections of the wetland were identified as barriers affecting evidence-based planning and conservation decision-making. This includes limited information on changes in habitat condition, biodiversity, land use, livelihood dependence, community participation, and the socio-economic drivers of wetland pressure.

3.1.4 Factors Limiting the Desired Long-Term Transformation

Reflections on why some challenges have persisted in the wetland revealed several interconnected structural challenges affecting long-term transformation efforts. Weak enforcement of sectoral policies and fragmented governance arrangements were repeatedly identified as major barriers affecting implementation of conservation actions and environmental regulations. These factors are not expected to be resolved through a single intervention; they require sustained coordination, institutional commitment, monitoring, and adaptive implementation over the long term.

Land tenure complexities continue to complicate restoration efforts and governance coordination within the wetland. The predominantly private nature of land ownership within and around King'wal Wetland was identified as a major challenge affecting boundary clarification, enforcement processes, and long-term conservation planning.

Socio-economic pressures for more land – such as farmers burning and converting more wetland to agriculture – were also identified as major constraints affecting behavioural and institutional change. Limited livelihood alternatives, inadequate conservation awareness in some communities, and weak institutional capacity continue to slow progress toward sustainable wetland management.

Governance-related challenges identified during the discussions are consistent with recent studies conducted within the King'wal riparian zone, which reported weak implementation of existing management frameworks, limited stakeholder coordination, and inadequate community participation in conservation governance processes (Biwott et al., 2024). Participants also emphasised the need to strengthen monitoring of implementation of the Wetland Management Plan and to periodically review and align the plan and its investment priorities with emerging evidence and the T-Lab priorities. The Wetland Management Plan (2021–2025) and its Implementation and Investment Matrix should therefore be treated as an important reference for monitoring delivery, identifying implementation gaps, and aligning future investment priorities with the evidence and priorities emerging from the T-Lab.

3.1.5 Synthesis of the Current Wetland Situation

The discussions illustrated a wetland system situated between isolated restoration efforts and continued degradation. While important gains are visible in conservation awareness, restoration initiatives, biodiversity protection, and stakeholder engagement, these improvements remain uneven in the face of persistent governance weaknesses, livelihood pressures, and emerging land-use change through expansion of sugarcane farming. These findings represent incremental progress and emerging pathways rather than evidence that transformation has already been achieved. Stakeholders emphasised that meaningful transformation in King'wal Wetland will require sustained, long-term coordination and implementation.

The reflections demonstrated that ecological degradation within King'wal Wetland is closely interconnected with governance systems, land tenure dynamics, institutional coordination, and community livelihoods. The discussions therefore reinforced the need for integrated approaches that simultaneously address ecological restoration, governance coordination, community participation, and livelihood resilience in order to support long-term transformation within the wetland landscape.

4. Co-Creating Transformation Pathways for King'wal Wetland

This section synthesises the collective processes through which stakeholders explored future possibilities for King'wal Wetland, reflected on transition pathways, identified emerging opportunities, and developed practical actions for long-term restoration and governance. The discussions moved beyond problem identification toward envisioning achievable and coordinated pathways capable of strengthening ecological restoration, biodiversity protection, governance coordination, and community resilience within the wetland landscape.

4.1 Reimagining the Future of King'wal Through the Three Horizons Exercise

This exercise built directly on the visioning work undertaken during the first T-Lab in 2024. Participants returned to the earlier understanding of the current system and desired future and used the second T-Lab to assess what had changed, what remained unresolved, and what pathways could move the system closer to the desired future identified previously.

The Three Horizons exercise provided a structured process for examining the current condition of the wetland system, identifying ongoing transition processes, and envisioning a more sustainable future for King'wal Wetland. The exercise enabled stakeholders to reflect on tensions between existing unsustainable practices and the long-term transformations required to restore ecological integrity and strengthen sustainable wetland governance.

Table 2: Three Horizons thematic matrix for King'wal Wetland transformation pathways

Theme	Horizon 1 (Current Challenges)	Horizon 2 (Transition Pathways)	Horizon 3 (Future Vision)
Biodiversity Protection	Poaching / habitat loss Burning of papyrus Encroachment through agriculture Fencing that does not adequately account for wildlife movement Planting of eucalyptus	Strict law enforcement Community scouts Habitat restoration Alternative livelihoods Fire breaks Climate-smart agriculture Indigenous tree planting	Increased biodiversity Restored habitats Thriving ecosystem Sustainable agriculture Healthy riparian zones
Alternative Livelihoods	Cultivation pressure Eucalyptus plantation Wild fires Overgrazing Sand harvesting Human-wildlife conflict	Awareness creation Alternative livelihood support Water management Fire management Improved grazing systems Law enforcement	Improved income Reduced wetland pressure Enhanced biodiversity Improved conservation outcomes
Governance Coordination	Weak or fragmented lead-agency coordination Unclear governance structures Limited functionality of technical committees Weak stakeholder coordination	Agreed lead-agency coordination mechanism Clearer institutional roles Functional technical committees Structured stakeholder coordination Shared information	Coordinated multisectoral governance Clear accountability Integrated information and reporting systems Strong policy and implementation framework
Community Awareness and Education	Inadequate awareness Resistance to change Limited communication channels Limited integration of indigenous knowledge	Sensitization workshops Trainings Barazas Diverse communication channels Integration of indigenous knowledge	Highly sensitized communities Community ownership of conservation Full integration of indigenous knowledge
Habitat Restoration	Farming pressure and firewood/charcoal extraction within and around the wetland Weak enforcement of policies Unresolved land ownership Small livelihood plots in surrounding communities	Beekeeping Fodder crops Wetland patrol units Wetland management committees Wetland mapping Energy-saving jikos	Reduced fires Ecotourism Conserved wetlands Sustainable livelihoods Improved ecosystem health
Boundary Clarification and Demarcation	Unclear wetland boundaries Land allocation conflicts	Assessment of wetland extent Sourcing maps Boundary establishment Realignment Delineation and conservation	Clearly demarcated and protected wetland boundaries

Horizon 1: The Current Wetland System

Discussions under Horizon 1 reflected widespread concern regarding continued ecological degradation, weak governance coordination, increasing land-use pressure, and growing socio-economic pressures within the wetland landscape. Encroachment into wetland areas, habitat destruction, recurrent wild fires, eucalyptus plantations, weak enforcement systems, and unsustainable resource extraction were identified as dominant characteristics shaping the current system.

Expansion of cultivation activities within and around wetland areas, particularly increasing sugarcane cultivation, emerged as a major concern linked to land conversion and pressure on ecologically sensitive areas. Participants also highlighted unresolved land ownership issues, fragmented institutional coordination, and limited implementation of conservation measures as major barriers affecting sustainable wetland management. The discussions further demonstrated that dependence on wetland resources for livelihoods continues to reinforce unsustainable land-use practices and environmental degradation across the landscape.

Horizon 2: Transition Processes and Emerging Innovations

The second horizon focused on ongoing initiatives, emerging innovations, and transitional processes capable of supporting movement toward a more sustainable wetland system. Stakeholders identified restoration initiatives, conservation awareness activities, biodiversity monitoring efforts, and increasing stakeholder engagement as important foundations already contributing to change within the landscape.

Alternative livelihood initiatives such as beekeeping, ecotourism, climate-smart agriculture, tree nursery and agroforestry, and community enterprise development were discussed as important opportunities for reducing pressure on wetland resources while strengthening household resilience. These initiatives, however, must be upscaled to have meaningful and intended impact on the wetland and society. Participants also highlighted increasing collaboration among community groups, conservation actors, researchers, and government institutions as a positive shift supporting collective action around wetland conservation.

Wetland boundary mapping exercises, restoration planning processes, and growing interest in participatory governance approaches were similarly viewed as important transformation pathways capable of strengthening institutional coordination and long-term wetland management.

Horizon 3: Desired Future for King'wal Wetland

Stakeholders envisioned a future where King'wal Wetland functions as a protected, restored, and sustainably managed ecosystem capable of supporting both biodiversity conservation and resilient community livelihoods. Discussions under Horizon 3 emphasised the importance of balancing ecological restoration with sustainable resource use and inclusive governance systems.

Participants envisioned a future characterised by restored wetland habitats, strengthened biodiversity protection, reduced encroachment, effective enforcement systems, and improved coordination among institutions responsible for wetland governance. Clear wetland boundaries and stronger stakeholder collaboration were identified as critical components of more sustainable wetland management.

The discussions also highlighted aspirations for increased ecotourism development, stronger community ownership of conservation initiatives, diversified livelihood opportunities, improved environmental awareness, and enhanced participation of youth and local communities in wetland governance processes.

4.2 Seeds of Change and Priority Pathways

The Seeds of Change exercise revisited transformation pathways identified during the first T-Lab while also incorporating new opportunities and emerging interventions identified during the workshop. The exercise enabled stakeholders to reflect on which initiatives were beginning to gain momentum, which remained under development, and which required stronger support and coordinated implementation (Figure 3).

The initial seeds identified during the first T-Lab included biodiversity protection, alternative livelihoods, governance coordination, community awareness, and boundary clarification.

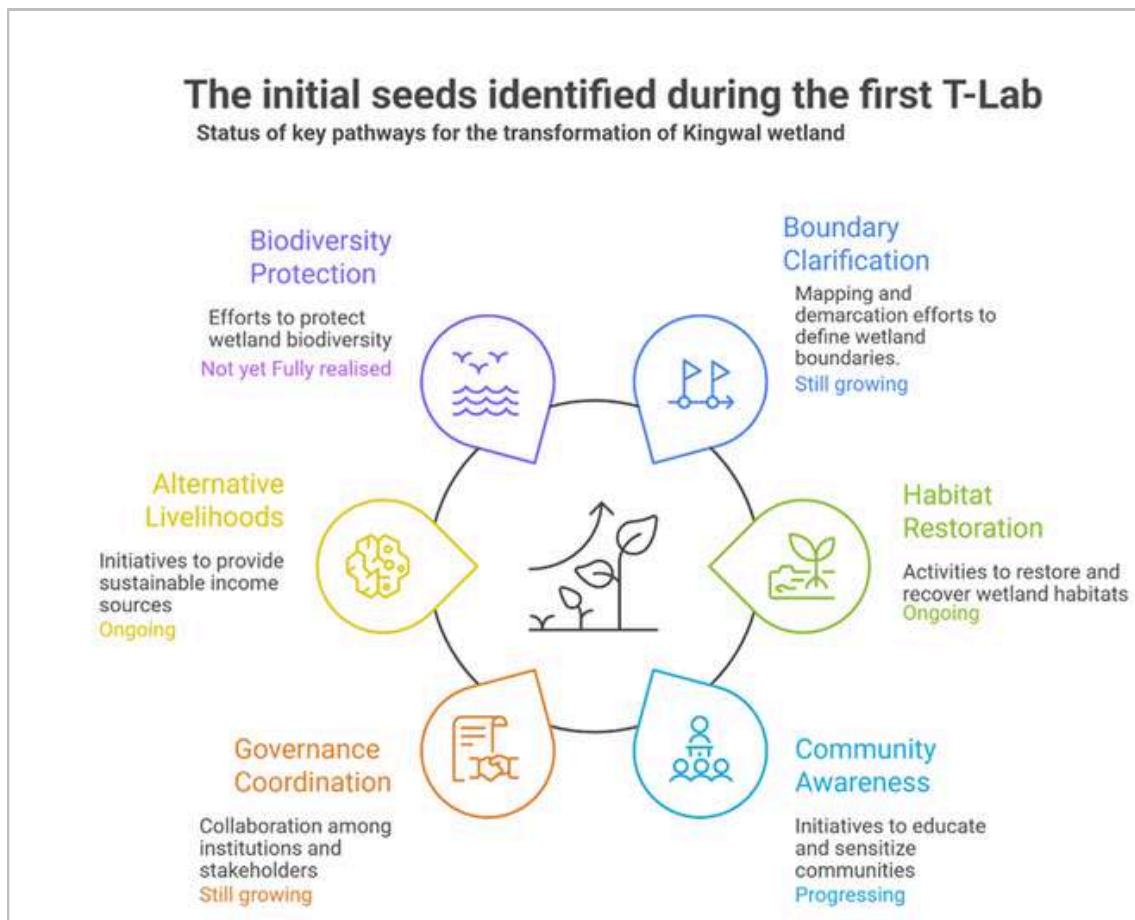


Figure 3: Initial Seeds of Change identified during the first King'wal T-Lab

For consistency in interpreting progress, “progressing” refers to evidence that an initiative has moved into implementation; “ongoing” indicates that implementation has started but is not complete; and “still growing” indicates that an initiative, participation base, or institutional engagement is expanding but remains at an early stage. These terms describe the stage and direction of implementation, not the quality or ultimate success of an intervention.

Table 3: New Seeds of Change identified during the second King'wal T-Lab

NEW SEEDS OF CHANGE IDENTIFIED FOR KINGWAL WETLAND		
NO.	NEW SEED OF CHANGE	DESCRIPTION / FOCUS AREA
1.	Multisectoral-led enforcement and patrolling	Strengthening collaborative monitoring, enforcement, and wetland protection efforts.
2.	Indigenous knowledge for conservation	Integrating local and indigenous knowledge systems into conservation practices.
3.	Inclusive conservation initiatives	Promoting participation of diverse community groups in conservation activities.
4.	Mainstreaming conservation within school curricula	Introducing conservation education through schools and learning institutions.
5.	Private sector and partner support	Expanding support from development partners, NGOs, and private sector actors.
6.	Community conflict-resolution forums (<i>barazas</i>)	Using local dialogue platforms to address wetland-related conflicts.
7.	Research and university engagement	Strengthening research, evidence generation, and academic collaboration.
8.	Early restoration success areas (<i>fencing and regeneration</i>)	Building on visible restoration progress within selected wetland areas.
9.	Ecotourism potential	Exploring tourism opportunities linked to biodiversity and wetland conservation.

Table 4: Initial, new, and priority Seeds of Change identified through participatory mapping and prioritisation

INITIAL SEEDS IDENTIFIED DURING THE FIRST T-LAB			NEW SEEDS IDENTIFIED DURING THE WORKSHOP		PRIORITY SEEDS (DOT VOTING RESULTS)	
NO.	INITIAL SEEDS	STATUS	NO.	NEW SEEDS		
1.	Boundary Clarification and Demarcation	<i>Still growing</i>	1.	Multisectoral-led enforcement and patrolling	1.	Boundary clarification and demarcation
2.	Habitat Restoration	<i>Ongoing</i>	2.	Indigenous knowledge for conservation	2.	Ecotourism potential
3.	Community Awareness and Education	<i>Progressing</i>	3.	Inclusive conservation initiatives	3.	Inclusive conservation initiatives
4.	Governance Coordination	<i>Still growing</i>	4.	Mainstreaming conservation within school curricula	4.	Community awareness
5.	Alternative Livelihoods	<i>Ongoing</i>	5.	Private sector and partner support	5.	Biodiversity protection
6.	Biodiversity Protection	<i>Not yet fully realized</i>	6.	Community conflict-resolution forums (<i>barazas</i>)		
			7.	Research and university engagement		
			8.	Early restoration success areas (<i>fencing and regeneration</i>)		
			9.	Ecotourism potential		

The five highest-voted priority seeds shown in Table 3 then informed the World Café discussions. In these discussions, participants collaboratively explored practical actions, implementation pathways, timelines, stakeholder responsibilities, and indicators for monitoring progress toward long-term wetland transformation and restoration.

4.3 Priority Actions and Pathways for Transformative Change

The prioritised seeds reflected stakeholder perspectives on the most urgent and strategic pathways required to support long-term restoration and sustainable management of King'wal Wetland. The discussions demonstrated that transformation within the wetland cannot be achieved through isolated interventions, but through integrated approaches capable of simultaneously addressing governance challenges, biodiversity conservation, livelihood resilience, and community participation.

Boundary clarification and demarcation emerged as a critical priority due to persistent land-use conflicts, encroachment, and continued uncertainty surrounding wetland boundaries. Stakeholders emphasised that unresolved boundary issues continue to undermine restoration efforts, weaken enforcement, and fuel tensions between conservation objectives and local livelihood needs. Similar governance and land-use conflicts have been documented across wetland systems in Kenya, where fragmented institutional arrangements and unclear management structures often complicate conservation efforts (Odeny et al., 2023). Stakeholders viewed boundary clarification not only as a technical exercise, but also as a governance process necessary for improving accountability, coordination, and long-term stewardship of the wetland landscape.

Ecotourism potential was identified as an important opportunity for linking conservation with local economic development. Discussions reflected growing recognition that the ecological and cultural significance of King'wal Wetland presents opportunities for nature-based enterprises capable of generating income while strengthening conservation incentives within surrounding communities. Stakeholders particularly highlighted the Sitatunga (*Tragelaphus spekii*), birdlife, and wetland ecosystem as assets capable of supporting ecotourism initiatives. Participants identified the need to identify suitable ecotourism potential sites, assess their suitability, and develop appropriate visitor/tourist information, interpretation materials, and basic site information to support responsible visitation.

Inclusive conservation initiatives similarly emerged as central to long-term transformation within the wetland. Stakeholders emphasised that conservation efforts are unlikely to succeed without meaningful involvement of communities, women, youth, local leaders, and indigenous knowledge holders in decision-making and implementation processes. Contributions from actors such as Women in Water and Natural Resource Conservation, the International Crane Foundation (ICF), the King'wal Water Resources Users Association (WRUA), community groups, county government, and other conservation actors were reflected in the discussions and action priorities. Discussions consistently pointed to the importance of local ownership, participation, and trust-building in strengthening conservation outcomes. These actors were not treated only as beneficiaries; their knowledge, networks, implementation experience, and relationships with local communities were part of the stakeholder-generated analysis and action priorities.

Community awareness was also identified as a foundational pathway for long-term change. Stakeholders observed that although awareness around wetland conservation has improved over recent years, significant gaps remain in public understanding of wetland governance, biodiversity protection, and sustainable resource-use practices. Discussions emphasised the need for continuous sensitisation, stronger communication strategies, integration of conservation education within schools, and greater use of local platforms for environmental awareness. Similar findings have been reported within wetland conservation studies in Kenya, where environmental education and awareness-building contributed to stronger community participation and more positive attitudes toward conservation initiatives (Githaiga et al., 2021).

Biodiversity protection remained one of the strongest priorities throughout the discussions due to continued habitat degradation, recurrent wildfires, encroachment, and unsustainable resource-use practices affecting the wetland ecosystem. Participants repeatedly expressed concern regarding the declining condition of habitats supporting species such as the Sitatunga (*Tragelaphus spekii*) and Grey Crowned Crane (*Balearica regulorum*). The discussions highlighted the need for restoration initiatives, stronger enforcement systems, habitat protection, and community stewardship approaches capable of safeguarding ecological integrity within the wetland. Similar pressures have been widely documented across East African wetland ecosystems, where agricultural expansion, weak enforcement, and increasing human activities continue to threaten biodiversity and ecosystem services (Kogo et al., 2021).

4.3.1 Priority Seed Actions and Indicators for Transformative Change

The prioritised seeds were further translated into practical action areas and measurable indicators to guide future implementation, monitoring, and learning within King'wal Wetland. The discussions moved beyond identifying problems and aspirations and instead focused on what tangible actions would be required to drive transformation across governance, conservation, livelihoods, and community engagement. Participants emphasised that transformative change would require coordinated interventions that are socially inclusive, ecologically grounded, and institutionally supported.

Ecotourism-related actions focused on appropriate infrastructure, identification of potential ecotourism sites, development of visitor/tourist information and interpretation materials, protection of key species, and establishment of partnerships capable of supporting local conservation economies.

The indicators developed by participants reflected a strong desire for visible and measurable outcomes. These included increases in restored habitats, numbers of people trained, conservation partnerships established, protected species recorded, outreach programmes implemented, and community participation levels. The indicators also demonstrated an emerging shift from activity-oriented conservation toward results-oriented monitoring systems capable of tracking ecological and social transformation over time.

Priority Seed Actions and Indicators					
Action	Boundary Clarification and Demarcation	Ecotourism Potential	Inclusive Conservation Initiatives	Community Awareness and Education	Biodiversity Protection
 Actions Identified	Mapping, beaconing, sensitisation, monitoring, gazettelement, enforcement, review, partnerships	Site identification, circuit creation, pricing, protection, surveys, sensitisation, infrastructure, hubs	Awareness, monitoring, clubs, partnerships, gender, planting, enterprises, CSR, faith, culture, research	Mobilisation, trainings, radio, field visits, peer exchange, social media, culture	Law enforcement, scouts, habitat restoration, firebreaks, climate-smart agriculture, planting, livelihoods
 Indicators of Success	Maps, acres reclaimed, reports, meetings, gazetted area, laws implemented, partnerships, protected sites	Tourist sites, tourist records, wildlife increase, accessibility, flora/fauna diversity, events, partnerships	People trained, clubs, species monitored, participation, women/youth/children/PWD participation, trees planted, farmers registered, research outputs	Meetings, outreach, groups, people trained, radio shows, surveys, field visits, exchange programmes, social media forums	Increased biodiversity, restored habitats, thriving ecosystems, reduced fires/poaching, increased protected species, sustainable agriculture, restored riparian zones

Figure 4: Participant-generated priority seed actions and indicators for transformative change

The discussions particularly highlighted the importance of linking conservation outcomes with livelihoods and governance systems. Participants recognised that conservation efforts are unlikely to succeed where communities remain economically vulnerable or excluded from decision-making processes. This aligns with wider literature showing that participatory conservation approaches are more sustainable when local communities are involved in governance, benefit-sharing, and resource management (Berkes, 2009). Similarly, integrated landscape approaches increasingly emphasise the importance of combining ecological restoration, local livelihoods, and institutional coordination in addressing complex socio-ecological challenges (Reed et al., 2016).

Community awareness and inclusive conservation emerged as foundational priorities across nearly all action areas. Participants repeatedly emphasised the role of schools, barazas, faith-based institutions, local media, and social learning platforms in strengthening conservation awareness and behavioural change. Existing research similarly shows that locally embedded environmental education and participatory learning processes can significantly enhance long-term stewardship and collective action in wetland ecosystems (Armitage et al., 2009; Fazey et al., 2018).

The strong emphasis placed on biodiversity protection, habitat restoration, and indigenous conservation practices also reflected the value of heritage and growing recognition of the importance of combining scientific and local knowledge systems. Participants viewed indigenous knowledge not as separate from conservation science, but as an important foundation for sustainable ecosystem management. This perspective resonates with studies highlighting the value of indigenous and local knowledge in improving ecosystem resilience, adaptive governance, and biodiversity conservation outcomes (IPBES, 2019; Tengö et al., 2014). The prioritised actions reflected a collective attempt to define what transformative change could practically look like within King'wal Wetland, while also establishing locally grounded pathways for monitoring progress, accountability, and future collaboration.

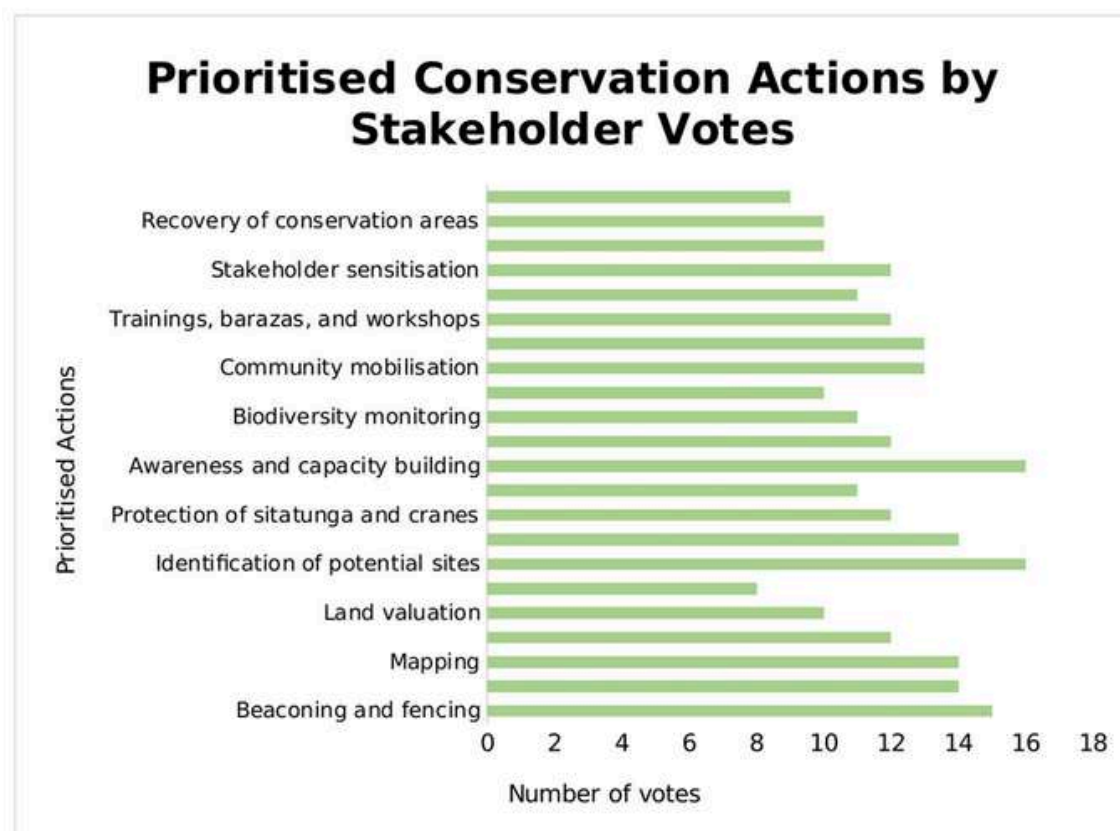


Figure 5: Stakeholder voting results for prioritised conservation and restoration actions in King'wal Wetland

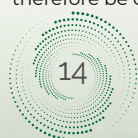
4.3.2 Transformative Action Roadmap and Timeline Mapping

Following the identification of actions and indicators under the prioritised seeds, participants further ranked the proposed actions according to urgency, feasibility, and expected impact. The prioritised actions were then mapped against implementation timelines to distinguish short-term (0–6 months), medium-term (6 months–2 years), and long-term (over 5 years) interventions necessary for advancing restoration and conservation efforts within King'wal Wetland (Table 5).

Table 5: Transformative action roadmap and implementation timeline

Timeline	Prioritised Actions	Focus Area	Lead Actor(s)
0–6 Months	Public sensitisation and awareness creation	Awareness & Participation	County Government, Community Groups, NGOs
	Stakeholder sensitization	Awareness & Participation	County Government, Conservation Organisations
	Community mobilization	Awareness & Participation	Community Leaders, CBOs, Youth Groups
	Capacity-building initiatives	Capacity Strengthening	NGOs, Researchers, County Government
	Gender mainstreaming	Inclusion & Equity	Women Groups, NGOs, County Government
	Community participation in ecotourism awareness	Ecotourism	County Government and Tourism Department, KWS, Community Groups, NGOs
6 Months–2 Years	Mapping and surveying	Governance	State Department for Lands & Physical Planning (Directorate of Surveys), NEMA, County Government
	Boundary survey, demarcation and agreed fencing of the wetland boundary	Governance	State Department for Lands & Physical Planning (Directorate of Surveys), NEMA, County Government, community representatives
	Biodiversity monitoring	Biodiversity Protection	KWS, NEMA, Researchers, Conservation Organisations
	Indigenous tree planting in suitable buffer-zone and catchment areas	Habitat Restoration	KFS, NEMA, WRUA and Community Groups, NGOs
	Habitat restoration	Habitat Restoration	County Government, NEMA, NGOs, Community Groups
	Protection of endangered species	Biodiversity Protection	KWS, Conservation Organisations
	Protection of Sitatunga (<i>Tragelaphus spekii</i>) and Grey Crowned Crane (<i>Balearica regulorum</i>)	Biodiversity Protection	KWS, Community Scouts, NGOs
	Strengthening law enforcement	Governance	County Government, KWS, NEMA, WRA
	Recovery of degraded conservation areas	Habitat Restoration	NEMA, KFS, Community Groups, NGOs
	Community trainings, workshops, and barazas	Community Engagement	County Government, NGOs, Local Leaders
	Linking conservation to culture	Community Engagement	Cultural Leaders, Community Groups
	Identification of potential ecotourism sites and development of visitor/tourist information	Ecotourism	Tourism Department, Researchers, Community Groups
	Baseline surveys on flora and fauna	Research & Monitoring	Universities, Researchers, Conservation Organisations
	Public-private partnerships (PPPs)	Partnerships	County Government, Private Sector, NGOs
	Conservation marathons and awareness events	Awareness & Participation	NGOs, Youth Groups, County Government
	Review and monitor implementation of the Wetland Management Plan and align investment priorities with T-Lab findings	Governance & Planning	County Government, NEMA and relevant wetland authorities, conservation organisations, community representatives, researchers
Over 5 Years	Land valuation	Governance & Sustainability	Ministry of Lands, County Government
	Development of wildlife enterprises	Livelihoods & Sustainability	Private Sector, Community Groups, Tourism Department

Note on implementation roles: boundary demarcation should be treated as a coordinated technical and governance process. NEMA has the national environmental coordination and wetland-management role, while the State Department for Lands and Physical Planning, through the Directorate of Surveys, is the official government agency for land surveying and mapping and provides land demarcation and survey services. County government and community representatives should participate in the local planning, consultation, and implementation process. The precise institutional arrangement for King'wal should therefore be confirmed with the relevant county and national authorities before beaconing or fencing is undertaken.



5. Cross Cutting Reflections and Emerging Insights

The discussions throughout the T-Lab revealed that the challenges affecting King'wal Wetland are deeply interconnected and cannot be addressed through single-sector interventions. Ecological degradation, biodiversity loss, governance fragmentation, livelihood pressures, and limited conservation awareness emerged as closely linked dynamics shaping both the current condition of the wetland and the possibilities for long-term transformation.

One of the strongest insights emerging from the discussions was the central role of governance in influencing restoration outcomes. Many of the prioritised actions – including boundary clarification, law enforcement, mapping, restoration, and biodiversity protection – were directly linked to concerns over weak coordination, unclear institutional mandates, and limited implementation of conservation measures. Stakeholders repeatedly emphasised that without stronger governance systems and sustained institutional collaboration, restoration efforts are unlikely to achieve long-term impact.

The discussions also demonstrated that community participation is increasingly recognised as essential for sustainable wetland management. Awareness creation, community mobilisation, inclusive conservation initiatives, and local stewardship consistently emerged across multiple thematic areas and prioritised actions. Participants viewed local ownership not simply as participation in conservation activities, but as a necessary foundation for strengthening accountability, behavioural change, and long-term sustainability.

Livelihood pressures similarly emerged as a recurring concern influencing conservation outcomes within the wetland landscape. Stakeholders repeatedly linked encroachment, unsustainable resource extraction, and continued environmental degradation to limited economic opportunities and dependence on wetland resources. As a result, ecotourism, wildlife enterprises, and alternative livelihood initiatives were increasingly viewed as important pathways for balancing conservation objectives with local economic needs. However, alternative livelihood initiatives need to be scaled up to facilitate achieving the desired transformation in the wetland.

Another important insight was the growing recognition of the value of integrating indigenous knowledge systems, local experiences, and scientific approaches within wetland governance and restoration processes. Participants emphasised that locally grounded knowledge, cultural practices, and community experience remain important resources for shaping practical and context-sensitive conservation interventions.

The prioritisation exercises further demonstrated that stakeholders increasingly view transformation as a gradual and long-term process. The roadmap discussions reflected recognition that immediate awareness and mobilisation efforts must be accompanied by medium- and long-term investments in restoration, biodiversity protection, governance strengthening, and sustainable livelihood systems.

6. Conclusion

The King'wal T-Lab process provided an important platform for reflecting on ongoing changes within the wetland landscape, assessing progress from previously identified transformation pathways, and collectively identifying actions necessary for long-term restoration and sustainable management. The discussions revealed that while important progress has emerged in areas such as awareness creation, stakeholder engagement, restoration initiatives, and governance discussions, significant ecological, governance, and livelihood challenges continue to affect the wetland system.

The findings demonstrated that challenges within King'wal Wetland are driven by interconnected pressures including encroachment, habitat loss, biodiversity decline, weak governance coordination, unsustainable resource use, and increasing livelihood vulnerability. At the same time, the discussions highlighted growing momentum around inclusive conservation approaches, restoration efforts, ecotourism opportunities, indigenous knowledge integration, and community-centred stewardship initiatives.

The prioritisation exercises further showed that stakeholders increasingly recognise transformation as a gradual and collaborative process requiring sustained coordination among communities, government institutions, conservation organisations, researchers, and private-sector actors. The action roadmap developed through the T-Lab reflected a shared commitment toward strengthening restoration, biodiversity protection, governance systems, awareness creation, and sustainable livelihood pathways within the wetland landscape. Continued monitoring and periodic review of the Wetland Management Plan, together with alignment of its investment priorities to the Seeds of Change and actions identified through the T-Lab, will be important for sustaining progress toward long-term transformation.

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8. Annexes

01 Figure 6



Current state of King'wal Wetland – stakeholder mapping outputs from the first T-Lab

02 Figure 7



Visioning pathways for habitat restoration, alternative livelihoods, and biodiversity protection in King'wal Wetland

03 Figure 8



Participants' actions and indicators output



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