



CROSS-CATCHMENT
COLLECTIVE

CROSS-CATCHMENT COLLECTIVE RESEARCH FRAMEWORK

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1. Introduction

1.1 Background and context

South Africa faces intertwined crises of biodiversity loss, water insecurity, unemployment and poverty, compounded by a persistent state - civil society disconnect. Healthy ecological infrastructure - mountain catchments, rivers, wetlands and springs - is essential to water security and climate resilience, yet degradation continues due to fragmented efforts and project-bound funding cycles.

The Cross-Catchment Collective (CCC) has emerged to connect existing partnerships, enabling them to collaborate, cross-learn, and scale impact beyond isolated projects. This Research Framework provides a shared approach across seven initial partnerships with scope for expansion. These partnerships include Agulhas Biodiversity Initiative (ABI), uMkhomazi Catchment Working Group (UCWG), uMngeni Ecological Infrastructure Partnership (UEIP), Northern Drakensberg Collaborative (NDC), Rivers of the Lowveld Collective (RoLC), uMhlathuze Water Stewardship

Partnership (UWASP) and Umzimvubu Catchment Partnership (UCP). The CCC is organised through the “Six Cs lens”:

- Conceptualise - develop shared understanding and models
- Collate - gather and integrate data and lessons
- Convene - create spaces for collaboration and governance
- Communicate - share knowledge effectively
- Capacitate - build skills and institutional strength
- Capitalise - mobilise and align resources

These enablers for effective collaboration guide practical, ethical, and scalable research and action across catchments.

1.2 Problem statement

Despite decades of research and investment in South Africa’s catchments, partnerships continue to face challenges in how research is generated, shared and applied:

- Duplication and irrelevance – studies are often repeated without reference to existing work or focus on issues disconnected from local priorities.
- Extractive practices – external researchers may collect data without sufficient accountability to communities, offering little feedback or benefit in return.
- Ethical misalignment with landscape contexts – research themes or approaches may not be appropriate, relevant, or sensitive to local social and environmental dynamics.
- Hierarchies of knowledge – research is sometimes approached from a ‘higher-order’ perspective that undervalues practitioner and community knowledge, limiting meaningful co-creation.
- Weak alignment with partnership priorities – research outputs are not consistently linked to catchment partnership strategies, funder priorities or policy agendas.
- Limited translation into practice – valuable findings often remain siloed in reports or academic journals, with insufficient synthesis or application in decision-making, funding proposals or advocacy.

These challenges reduce the credibility, usefulness and impact of research, and weaken the ability of catchment partnerships to drive systemic change. The CCC

Research Framework responds by promoting ethical, collaborative and action-oriented research, strengthening both local ownership and cross-catchment learning.

1.3 Purpose of the Research Framework

The CCC Research Framework sets out a shared, collaborative, approach for undertaking and engaging with research within and across catchments. Its purpose is to:

- Provide a collective reference point for catchment partnerships, researchers, and funders.
- Define priority themes and principles to ensure research responds to catchment needs and strengthens action on the ground.
- Clarify processes for identifying, designing, and sharing studies
- Ensure that diverse forms of knowledge are mobilised and accessible for decision-making, policy influence, local practice, and resource mobilisation.

The CCC does not intend this framework to act as a gatekeeping mechanism, but rather as an entry point for researchers seeking to engage with catchment partnerships in ways that respect and strengthen existing relationships.

While developed by the CCC partners, the framework is intended as a resource for others working to support collaborative catchment management, and may be adapted to suit different local contexts.

2. Guiding Principles

The Research Framework is underpinned by principles that ensure research is ethical, relevant, and directly supportive of catchment partnerships, local communities and practitioners.

Values and ethos:

- Equity and epistemic justice – Different knowledge systems (scientific, Indigenous, experiential) are recognised on equal footing.
- Co-learning and agency – Communities and practitioners are active in setting priorities, framing questions, and hosting research.
- Positive contribution and reciprocity – Research is encouraged to generate tangible benefits for community livelihoods, cultural values, and land stewardship, including opportunities for capacity building.

Ways of working:

- Prevention of research fatigue – Researchers are encouraged to consult catchment partnership structures and existing data repositories before designing studies, to avoid duplication and build on existing knowledge.
- Pragmatic and feasible – Emphasis is placed on efficient, minimum-viable studies that support applied learning and timely insights.
- Participatory and iterative – Processes are co-designed and adapted through reflection and feedback.
- Open knowledge – Results should be shared in accessible formats, while respecting community data ownership and sensitivities.

Ethical practice:

- Respect, accountability, and transparency – Researchers should demonstrate that they meet legal and ethical requirements, including informed consent, confidentiality, clear communication of intentions, and reporting back to participants and communities.
- Balance of outputs – Academic publications are complemented by policy briefs, case studies, and other accessible outputs.
- Non-extractive engagement and symbiosis – Research should demonstrate mutual benefit for communities and landscapes. Contributions may include logistical support, training opportunities, internships, or local research assistants.
- Infrastructure-enabled participation – For virtual engagements, researchers should provide appropriate technical support and collaborate with a local facilitator.
- Co-design and co-authorship – Researchers are encouraged to co-design research processes and co-author outputs with local institutions and partners.

3. Conceptual Framework

The CCC Research Framework is guided by a set of conceptual orientations that provide coherence across diverse research activities while allowing space for innovation and contextual adaptation. These orientations are not prescriptive models but reference points that help align research with the ethos, aims, and collaborative approach of the CCC.

- Social–ecological systems thinking – recognising catchments as integrated systems where ecological processes and human well-being are

interdependent, requiring approaches that enhance resilience and sustainability.

- Transdisciplinarity and epistemic justice – bridging scientific, Indigenous, and experiential knowledge systems on equal footing to support more inclusive and context-sensitive solutions.
- Transformative learning and co-learning – emphasising reflection, dialogue, and agency, where research is both a process of knowledge generation and a catalyst for systemic change.
- Governance and innovation lenses – examining collaborative governance, financing mechanisms, and institutional arrangements that support equitable and effective catchment management.
- Nature-based solutions (NbS) – grounding research in ecological restoration and conservation practices that deliver multiple benefits for water security, livelihoods, and climate adaptation.
- Knowledge-to-practice approaches – drawing from frameworks on knowledge uptake, translation, and co-production to ensure research outputs are accessible, usable, and embedded in decision-making.

Together, these orientations support research that is systems-oriented, participatory, and action-driven, while remaining flexible enough to respond to the diverse realities of South Africa's catchments.

4. Research priorities

Research priorities within the CCC are co-developed and continuously refined through engagement with catchment partnerships and members of the Collective. They build on shared experience from initiatives within the catchments, and align with broader policy and programme priorities, including WRC projects, SANBI programmes, CMA

mandates and catchment strategies. Priorities remain dynamic and adaptive, responding to emerging challenges, opportunities and partner insights.

4.1 Thematic areas

- Water resources and access
 - Water quality and pollution control
 - Groundwater systems and water balance
 - Hydrological modelling and climate futures
 - Water governance, rights and conflict mediation
- Landscape function, biodiversity and resilience
 - Soil erosion and land degradation
 - Flow regulation and infiltration
 - Alien invasive plant control
 - Spring and wetland protection and restoration
 - Biodiversity and ecosystem health as foundations for water security and livelihoods
 - Fire ecology and catchment risk reduction
 - Alternative restoration and regeneration strategies that complement existing actions by residents and local support agencies
 - Sustainable agriculture and water efficiency
- Livelihoods and equity
 - Income generation and green enterprise development
 - Youth employment and work experience in nature-positive careers and nature based solutions
 - Equitable access to water, land, landscape resources, value chains, and decision-making
 - Linking ecological restoration with livelihood benefits
 - Exploring biomass value-add options linked to carbon markets within blended finance approaches
- Governance and finance innovation
 - Piloting and scaling blended finance approaches
 - Co-management and adaptive governance models
 - Interfaces between Catchment Management Agencies, NGOs, and communities
 - Ensuring sustainability and minimal risk for carbon agreements on communal tenure land, including the ethics of long-term commitments for future generations
 - Economics of ecosystem restoration and catchment investment
- Co-learning and agency

- Facilitation and transformative social learning
- Storytelling, reflection, and participatory knowledge exchange
- Community-based monitoring and citizen science as tools for voice and influence
- Monitoring methods, data and research practices
 - Low-cost, participatory indicators and tools
 - Community science approaches aligned with NGO Collab, WRC, SANBI and other global metrics and SDGs
 - Integration of ecological and socio-economic indicators
 - Data governance and digital monitoring systems
 - Research ethics and responsible knowledge practices
 - Research-to-policy pathways and impact tracking
- Cross-catchment collaboration
 - Comparative learning and synthesis across diverse catchments
 - Mechanisms for sharing innovations and lessons across the Collective
 - Platforms for convening, joint advocacy, and shared strategy
 - Development of a handbook for convening effective and impactful learning exchanges

4.2 Cross-cutting issues

All thematic areas are shaped by key cross-cutting dimensions:

- Balancing ecological and livelihood benefits equitably
- Climate change adaptation and resilience
- Gender equality and social inclusion
- Youth engagement in research and practice
- Indigenous and local knowledge integration
- Scalability and transferability of innovations across contexts
- Accessibility of lessons to landscape residents and actors

4.3 Priority-setting process

Research priorities are identified and validated through iterative consultation with CCC members and partners. The process includes:

- Mapping of existing studies, projects, and datasets to avoid duplication.
- Gap analysis workshops within catchments and across the collective.
- Use of a simple scoring matrix (relevance, feasibility, community demand, funder interest) to rank proposed topics.
- Annual review and adjustment to ensure priorities remain responsive to changing contexts, opportunities, and challenges.

5. Research design and approach

5.1 Overall approach

The CCC Research Framework translates its guiding principles into a pragmatic approach to research practice. In the CCC, research is:

- Participatory by design – co-defined with communities and partnerships so that questions and methods respond directly to local priorities, with regular feedback and engagement.
- Iterative and adaptive – structured around cycles of reflection, learning and adjustment rather than rigid linear processes.
- Pragmatic in scale – emphasising focused, minimum-viable studies that generate timely and actionable insights, while allowing for longer-term or more in-depth research where appropriate.
- Action-oriented – designed to inform decision-making, improve practice and strengthen partnerships, rather than only producing academic outputs.
- Flexible across levels and approaches – ranging from micro-studies within communities to cross-catchment comparisons and collective synthesis, connecting research with practice and supporting citizen science and land-user participation.
- Accessible and shareable – producing outputs that can be used by practitioners, funders, policymakers and communities, including formats such as summaries, infographics and posters.

This approach ensures that research remains practical, non-extractive and grounded in real catchment contexts, while enabling learning, synthesis and broader influence.

5.2 Research across levels

Research within the CCC takes place at different but connected levels, allowing learning to emerge locally while contributing to wider synthesis and collaboration. These levels are not fixed categories but flexible entry points, depending on context, resources, and partnership needs.

- Micro (local studies)

Short, focused, community-driven studies that generate rapid and actionable insights. Examples include testing restoration practices, documenting local

water access challenges, or piloting participatory monitoring tools. These studies strengthen local decision-making and agency.

- Meso (cross-catchment comparisons)

Comparative studies across multiple partnerships that explore patterns, innovations, or governance challenges. These support cross-learning and help identify approaches that work under different conditions.

- Macro (collective synthesis and policy influence)

Analysis and synthesis across the CCC as a whole, drawing on local and comparative work. This level enables the CCC to engage with national policy processes, influence funder priorities and contribute to broader debates on water security, biodiversity and livelihoods.

5.3 Alignment

Research is aligned with partnership strategies and contributes to broader sector priorities, helping ensure relevance for communities, funders, and policy processes.

6. The CCC Research Framework and MERL

The Research Framework is integrated within the CCC Monitoring, Evaluation, Research and Learning (MERL) system. The Framework sets the principles, priorities and approaches for research across catchments, while MERL provides the processes and tools for capturing outputs, reflecting on their relevance, and ensuring knowledge is accessible and usable.

Together they form an integrated system: the Research Framework guides what research is undertaken and how, while MERL tracks outputs, tests their uptake, and feeds learning back into the framework. This alignment helps ensure research remains ethical, demand-driven and continuously adapted to strengthen partnerships, inform policy and support systemic change.