

Engaging society and building participatory governance in a rural landscape restoration context

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ARTICLE INFO

Keywords:

Participatory governance
Landscape restoration
Transdisciplinary research
Epistemic justice

ABSTRACT

Although the Anthropocene has heralded unprecedented recognition of, and concern about the consequences of landscape degradation to humans, pathways to effective long-term landscape restoration remain uncertain. Restoration is a human activity that resists negative trajectories of environmental change, whereas participatory governance involves relationality between those entrusted with formal governance of natural resources and those who directly use, benefit from, and impact on natural resources. This paper outlines the transdisciplinary approach of the Tsitsa Project in the Eastern Cape Province of South Africa to restore a degraded rural landscape. The project aspires “To support sustainable livelihoods for local people through integrated landscape management that strives for resilient social-ecological systems, and which fosters equity in access to ecosystem services”. In the project, landscape management has included extensive restoration aimed to reduce erosion, increase grazing vegetation-cover, and reduce river silt loads. It has also involved engagement in a reflexive learning process with local residents, government officials and traditional leaders to derive a Capability Pathway for the development of participatory governance. A foundational step, Co-Knowing, initiates the pathway. The concept of epistemic justice guided the goal of fair inclusion among participants, the development of a shared vocabulary and the conceptual understanding required for local people to move towards real governance participation. Narratives from stakeholders provide evidence that the process is building participatory governance agency. These approaches provide credible evidence for the value of building participatory governance capabilities as a foundation for long-term restoration outcomes.

1. Introduction

The language describing Earth-human relationships is frequently utilitarian. People *use* natural resources. Ecosystem services are *provided* to humans. Landscapes are managed *for* human benefit. At the same time, damage to ecosystem structure and function arising from human-use is increasingly acknowledged. We engage with the Anthropocene as the proposed era when human impact on Earth's environment may be sufficiently substantive to warrant recognition as a distinct geological epoch. Restoration is a human activity that resists negative trajectories of environmental change. This paper focuses on human impacts related to historical social engineering (McAllister, 1992) and pastoralism (Palmer and Ainslie, 2006) that have led to landscape transformation and degradation in a rural South African context. Restoration is a balancing activity, where humans invest in longer-term benefits and

seek new ways to define the Earth-human relationship. This paper focuses on a government restoration programme, supported by research, with both biophysical goals (for example increased vegetation cover and less erosion), and also linked societal goals (for example more reliable livelihoods) (Cockburn et al., 2018). Participatory governance speaks to the three-way relationship between those entrusted with formal governance of natural resources, those who directly use, benefit from and impact natural resources, and the ecosystems themselves (Gaventa, 2004). In this paper, we suggest that participatory governance development underpins the likelihood of biophysical restoration delivering ecological and societal benefits.

Governance that is inclusive of all sectors of society is vital in the search for pathways towards planetary sustainability (Gunderson et al., 2017; Löfmarck and Lidskog, 2017; Brand et al., 2021). At the global scale, the Intergovernmental Panel on Climate Change, United Nations

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<https://doi.org/10.1016/j.ancene.2022.100320>

Received 23 April 2021; Received in revised form 3 January 2022; Accepted 4 January 2022

Available online 7 January 2022

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Framework Convention on Climate Change, the Intergovernmental Panel on Biodiversity and Ecosystem Services and the United Nations Environment Programme all forefront collaborative and participatory mechanisms and the inclusion of indigenous and marginalised knowledge and perspectives (Díaz et al., 2015; Morandin-Ahuerma et al., 2019; Brand et al., 2021; Schoon et al., 2021).

People's ability or capacity to participate meaningfully in social and environmental change processes is learnt, built and dynamic (Blackmore et al., 2011), and should not be assumed as fixed, stable or inherited (Reid and Nikel, 2008). A focus on capability development to foster effective participatory governance is finding traction in literature from various Global South contexts: sustainable city and urban planning (Anand, 2020; Frediani and Cocina, 2019), natural resource management (Pelenc et al., 2015; Barrios et al., 2020; Fleischman and Solorzano, 2018), and landscape restoration (Cockburn et al., 2020; van Oosten et al., 2021). Fleischman and Solorzano (2018) argued that establishing institutional spaces for participatory governance creates a demand for participation and a requirement to develop and nurture participatory capabilities among citizens.

The notion of participatory governance is fundamentally about fair inclusion in decision-making and hierarchies of power. The concept of epistemic (in-)justice speaks to that fairness. Fricker (2007) recognised two aspects of how ways of knowing impact fairness. First, 'testimonial injustice', occurs when a speaker is wrongfully dismissed or judged by a listener as a knowledge giver, due to both their identity and the prejudice the listener has against the speaker. Second, 'hermeneutical injustice' occurs as a result of marginalisation, where a marginalised group is deprived of a platform to share their social understandings and experiences because they do not have the same frame of understanding as the listeners or other groups (Catala, 2015). Examples common in South Africa are where race, gender and identity exacerbate testimonial injustice, and barriers related to education, culture, class and language exclude hermeneutically. These wrongs are deeply embedded and pernicious, creating and perpetuating systems of exclusion from the foundational practices forming what it is to 'know'. Bhargava (2013) recognised epistemic injustice as a form of cultural injustice, which happens when previously colonised people's interpretive resources (epistemic frameworks) have been replaced by those of their colonisers. This is said to damage the collective capacity of the group to sustain their interpretive resources, which may reduce their capacity to exercise agency when interacting with new people and new challenges (Bhargava, 2013). The corollary of epistemic injustice is epistemic justice (Fricker, 2013; Glass and Newman, 2015), which, in an understanding of people as embedded in their bio-physical landscape, can encompass social-ecological justice (Wolff et al., 2019).

Epistemic justice therefore plays an important role in developing practices for fair participation in natural resource governance among those responsible for policy design and management practice, and those who experience the benefits and dis-benefits associated with using the resources. Ansell and Gash (2008) included epistemic justice in a model of collaborative governance that emphasises the importance of power-resource-knowledge imbalances. It also draws attention to shared understanding as a key part of a virtuous cycle characterized by collaboration, trust and commitment leading to fair, long-term sustainability.

Within this framing of participatory governance as valuable, this paper places a focus on the *process* of participatory governance capability development, using a rural landscape restoration initiative in South Africa to exemplify nuances that could critically affect the outcome of such an intervention. We address three questions that arose chronologically through the project, the second of which is the primary research question addressed in this paper.

- How do transdisciplinary researchers co-refine pre-formulated research questions?

- How can researchers and stakeholders build vocabulary and a shared understanding of a place-based context?
- How does participatory governance development increase the likelihood of biophysical restoration delivering ecological and societal benefits?

2. A place-based context: The Tsitsa Project, Eastern Cape, South Africa

A rural landscape restoration initiative in South Africa is the place-based context within which we have explored the *process* of participatory governance capability development.

2.1. Formal, traditional and participatory governance in South Africa

In South Africa, formal governance includes the interplay between national, regional and local levels of government in different sectors, whereas traditional governance (under customary law) includes chiefs, headmen and traditional councils. Although participation in natural resource management is legislated across all tiers of government in South Africa, such as the Municipal Services Act (Act No. 32 of 2000) and the National Water Act (Act No. 36 of 1998), service delivery is not meeting the needs and demands of citizens. The lack of services in areas under customary law is an ongoing legacy of apartheid, whereas instances of formal governance failures in urban centres increasingly contributes to service delivery protest and reactive management (Trapscott, 2017). Tension also exists between traditional and formal governance (Mustasilta, 2021). Given the cogent arguments that participatory governance deepens democratic engagement through the participation of local communities, (Gaventa, 2004; Stringer et al., 2006), the Tsitsa Project sought to open pathways for ordinary people to actively and effectively influence policies and practices that impact lives.

2.2. The Tsitsa Project

The Tsitsa River is a tributary of the Mzimvubu River system, located in the northern Eastern Cape Province of South Africa (Fig. 1). The Tsitsa Project is an initiative of the Chief Directorate: Natural Resource Management, in South Africa's Department of Forestry, Fisheries and the Environment, and is a multi-stakeholder initiative with partnerships across government, universities and Non-Governmental Organisations (Cockburn et al., 2018). Launched in 2015, the Tsitsa Project is a research-supported landscape restoration project planned in three 3-year funding tranches. The covid-19 pandemic critically disrupted Year 6 (2020) and funding became uncertain for the final three years. The overall objective of the project is "To support sustainable livelihoods for local people through integrated landscape management that strives for resilient social-ecological systems, and which fosters equity in access to ecosystem services".

Despite the ecological importance of the study area, with upper reaches designated as Water Resource Class I (Department of Water and Sanitation (DWS), 2018), and the Lower Mzimvubu identified as one of the country's sub-national Water Source Areas for groundwater (Le Maitre et al., 2018), concern has been growing regarding the condition of the catchment. The productive highland grasslands support livestock, and grow on deep, easily erodible dispersive soils (Parwada and Van Tol, 2016; Le Roux, 2018). Destructive colonial and apartheid-era policies and practices, together with intensive un-herded livestock-use, has reduced vegetation cover and increased erosion, leaving the landscape degraded and local communities materially poor, with uncertain livelihoods (Bäse et al., 2006; Bennett and Barrett, 2007; Bennett et al., 2007; Beinart, 2008). The scattered villages, short-cropped grass, wandering livestock and deeply incised gullies speak of the inextricable link between people and their landscape. The catchment is clearly a complex social-ecological systems, where ecosystem interventions like

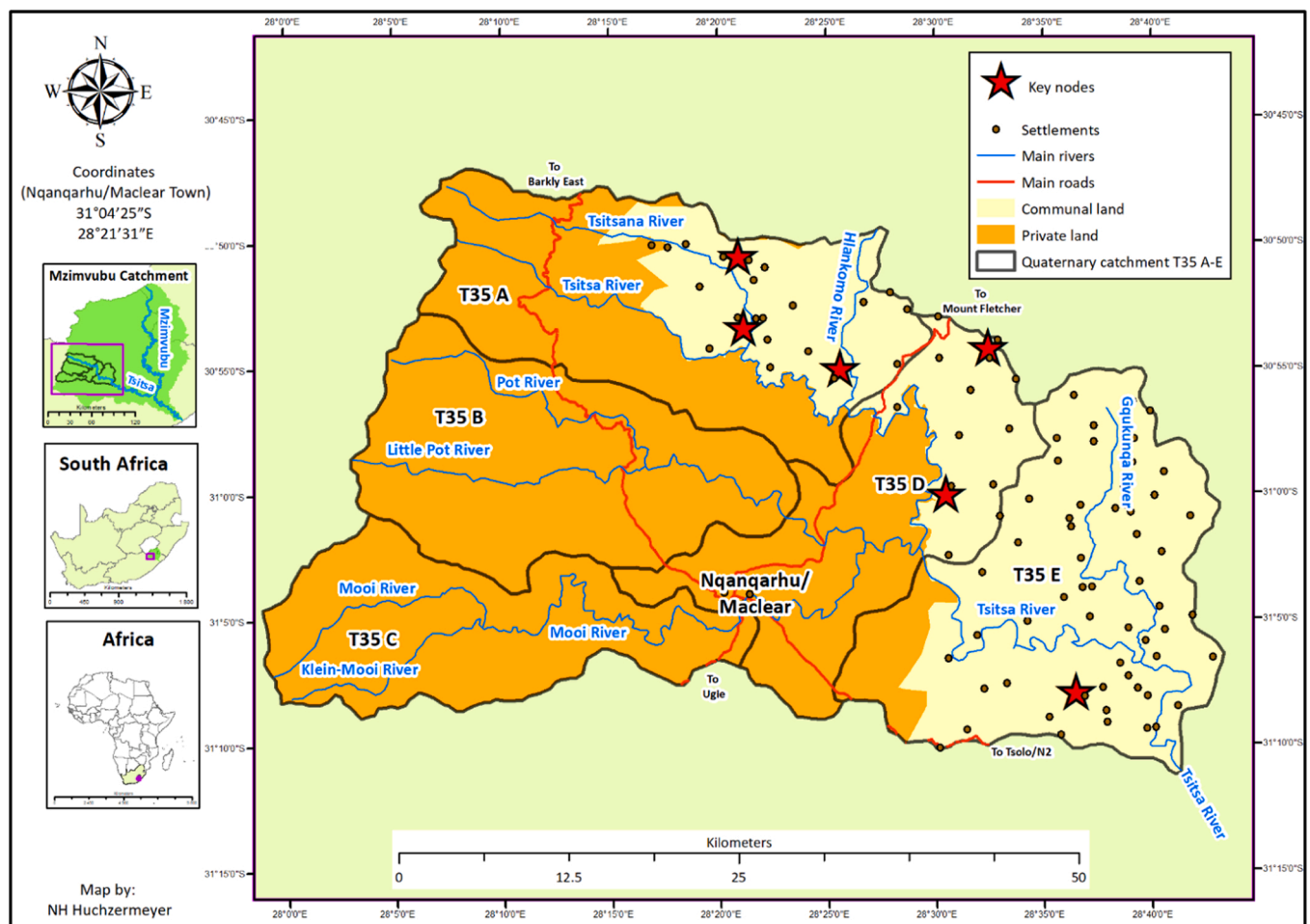


Fig. 1. Map of the Tsitsa River Catchment, within the Mzimvubu Catchment, within the Eastern Cape of South Africa. Key nodes are focal areas for the Tsitsa Project engaged research and restoration work. Communal land is land under customary law owned by the state and administered by traditional leadership.

restoration cannot be undertaken without consideration of interactions with the surrounding social system (Cockburn et al., 2018).

Following transdisciplinary principles of engagement (Palmer et al., 2015), collaborating research Communities of Practice undertook the research that supported the project in the domains of Governance, Livelihoods, Knowledge and Learning, Sediment and Restoration, Grass and Fire, and Systems Praxis. The term 'Community of Practice' (*sensu* Wenger, 2010) indicates that the research informed practice (or praxis) was consistently relational, involving various disciplinary researchers, all levels of government, non-governmental organisations, practitioners, and catchment residents. Relational knowledge sharing and co-learning focussed on finding practical pathways towards the Tsitsa Project vision. The *raison d'être* of the Governance Community of Practice was that even with a decadal project investment, only local capacity and capability would ensure longer-term benefits from restoration activities, and that linking local people effectively into land and water governance practice was a possible mechanism.

2.3. Transdisciplinarity and the Capability Approach

The commitment of the Tsitsa Project to transdisciplinarity infused every aspect of the research. The transdisciplinary praxis involved attentively drawing in knowledge from all project stakeholders in order to include the broadest range of knowledge; actively addressing the complex problems associated with social-ecological decline; and, undertaking the research with, and for society (Wolff et al., 2018). Specifically, we co-developed a capability-development approach for

transformation towards participatory governance, describing the process as a 'Participatory Governance Capability Pathway' (Palmer et al., in prep.; Fig. 2; Text Box 1).

Adoption of a capability approach (*sensu* Sen, 1999; 2004) aligns with both the Alkire (2005) conviction of its fundamental value beyond methodological utility, and the Bockstael and Berkes (2017) recognition of human well-being as a central purpose of development, rather than humans as a means to effect development. The application of the Capability Approach to the Tsitsa Project culminated in the development of a Capability Pathway (Fig. 2). The Capability Pathway essentially consists of iteratively connected phases: Co-knowing, co-listening and speaking; co-planning; co-influencing and co-decision-making - collectively culminating in capable participatory agents. In this paper, we present and explore the first stage of the pathway: Co-Knowing.

3. Methodology

The methods related to the questions raised in Section 1 are embedded in the Tsitsa Project overarching methodological process. Cockburn et al. (2018) described in detail the methodology of the project, which was formally approved by the Rhodes University Committee for Research Ethics.

3.1. Engaged Research

Question1: How do transdisciplinary researchers co-refine pre-formulated research questions?

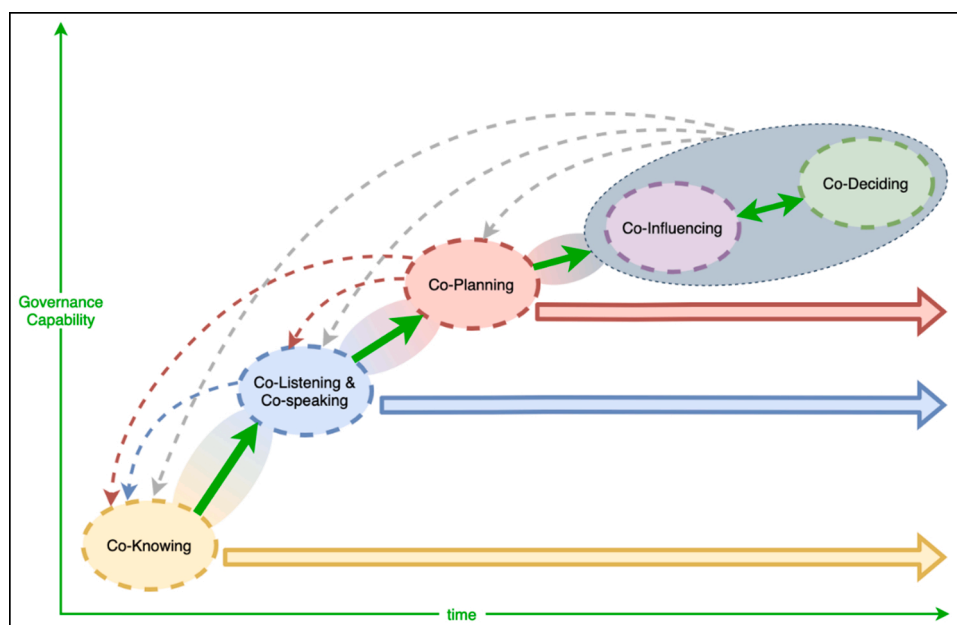


Fig. 2. The participatory governance Capability Pathway developed for the Tsitsa Project. Each domain of capability leads to the next, with systemic feedback where capabilities are iteratively deepened through multiple engaged activities. Capabilities are nurtured sequentially through time. Each capability also develops through time (linear parallel arrows), and interactively with the other evolving capabilities (broken-line feedback arrows) (Palmer et al., in prep.).

Text Box 1

Limits of epistemic justice – a narrative of learning.

In the Tsitsa Project Governance Community of Practice, participatory governance development emerged from processes to inclusively develop catchment management strategies. Initially, the Adaptive Planning Process (Rogers and Luton, 2011), undertaken as a facilitated workshop (Palmer et al., 2018), was the mechanism of stakeholder engagement. Workshop design and facilitation paid active attention to (i) ensuring all participants experienced feeling equally respected, and experienced reduced power imbalances; (ii) active listening, encouragement and sensitive context appreciation; and striving to develop a shared understanding of content and concepts, to encourage participant comfort in voicing contributions. Analysis of participant reflections revealed the participants' experience of fair, respectful inclusion – testimonial epistemic justice - but did not emerge with clear, shared understanding of concepts and information content, and were still subject to hermeneutic epistemic injustice (Ralekhetla, 2019). Despite translated presentations, designed to be accessible, participants expressed deep limitations to their understanding of content material presented. For participants whose first language is isiXhosa, the term 'catchment' came up repeatedly, for example, but no Xhosa word exists for 'catchment'. We discovered participants leaving engagement workshops feeling heard and respected, but without the language and understanding to participate meaningfully within land and water governance institutions. We realised we were far from actually facilitating transformation towards real participatory governance. Our response to the notion of hermeneutic epistemic has been the participant-led co-development of a common language and conceptual vocabulary, through 'Learning Words' workshops, which has underpinned the 'Co-Knowing' phase presented in this paper.

Working as an integrated part of the wider Tsitsa Project, and building on the Tsitsa Project foundations, was fundamental to the Governance Community of Practice methodology. It is out of an engaged research approach that research questions emerged from participatory engagement rather than preformulated by researchers.

3.1.1. Knowledge of the catchment and stakeholder mapping

Early in the Tsitsa Project, a stakeholder report, map, database of key stakeholders and GIS layers were developed (Sitsika et al., 2016), and have been regularly updated. Sitsika et al. (2016) emphasised the value of assessing the effectiveness of collaboration among stakeholders and identifying where collaboration appeared strongest. A complex picture unfolded of stakeholders with varying interests and perspectives on the different development-related activities taking place in their area. A mosaic of strong collaboration and communication, overlap in responsibilities, and weak co-ordination was evident. Collaboration was

generally at small scales in relative isolation - indicating the likely challenge of strengthening of relationships essential to progress towards the vision of a sustainably managed catchment with truly collaborative and participatory decision-making.

3.1.2. Establishing a presence in the catchment

Fundamental to engaged research was to establish presence of the Tsitsa Project and to ensure that local people understood, and could influence, the purpose of that presence. Crucially, this aspect of the Tsitsa Project was mediated by the Catchment Co-ordinator whose mother-tongue and identity were consonant with rural residents. The co-ordinator communicated and mediated research-related visits, accommodation and the purpose of Tsitsa Project teams. Catchment residents became embedded in activities of the Community of Practice. For example, citizen technicians worked with the Sediment and Restoration Community of Practice (Bannatyne et al., 2017); eco-rangers with the

Grass and Fire Community of Practice; and citizen monitors with the Livelihoods Community of Practice. Catchment residents were also included as workshop participants. Their participation, however, raised ethical issues, as discussed in [Text Box 2](#). In Year 5 of the Tsitsa Project, Community Liaison Officers were employed. The Community Liaison Officers participated in training and practiced skills related to land and water governance, communication and community engagement, and citizen science. They worked with all the Communities of Practice to engage local citizens in project-related activities such as workshops, *imbizos* (discussion events), and other natural resource management planning meetings, as well as advising the Catchment Co-ordinator of activities taking place in their respective areas. They communicated and co-ordinated activities with community members, and within the Governance Community of Practice, had the specific role of becoming agents of participatory governance development.

To navigate the strongly hierarchical traditional leadership structures, the research team adapted their practice through extensive direct engagement with traditional leaders, building relationships of respect and trust. The role and presence of the Catchment Co-ordinator, together with clear, effective, regular and transparent communication by the Tsitsa Project Manager, were crucial. This approach drew traditional leaders positively into participatory governance development processes.

3.2. Elicit local knowledge

A variety of methods are available to share knowledge among researchers and participants, as well as deepen understanding of held and shared knowledge. These methods include workshops, focus group discussions, adaptive planning, interviews and participatory mapping exercises. A social-ecological systems framing helped to ensure integration of natural and social sciences, with the participatory governance Capability Pathway guiding the method. In such a complex matrix of thinking, planning and acting, it is easy to get lost and inattentive. The Tsitsa Project innovation of Participatory Monitoring, Evaluation, Reflection and Learning (PERML) helped to anchor habits of noticing, recording and learning from practice and reflection ([Rosenberg and Human, 2018](#)). The summary 'Plan, Act, Reflect, and Learn' was a helpful reminder.

3.2.1. Framing the research questions

As raised in [Question 1](#), participants should ideally collaborate in the framing of research questions, as well as collaborating in addressing them. In competitively funded research projects, researchers pre-

formulate research questions and methodologies. The research questions listed in Section 1.1 emerged from ongoing research engagement and developed from initial questions framed.

3.2.2. Learning Words workshops

Question 2. *How can researchers and stakeholders build vocabulary and a shared understanding of a place-based context ?*

Participatory workshops ([Palmer et al., 2018](#)) were the primary vehicle of developing participatory governance. They supported open knowledge exchange and the emergence of consensus ([Wolff et al., 2019](#)). As the need for aspects of hermeneutic epistemic justice became clear, the Governance Community of Practice designed *Learning Words* workshops that aimed to build a co-understanding of the concepts and vocabulary used in natural resource management and restoration discourse and practice, and those used locally in livestock grazing and other livelihood practices. The Learning Words workshops were foundational to the Co-Knowing step of the Capability Pathway ([Fig. 2](#)). Once the Learning Words workshop design had been refined with Community Liaison Officers, they co-led workshops in villages across the catchment.

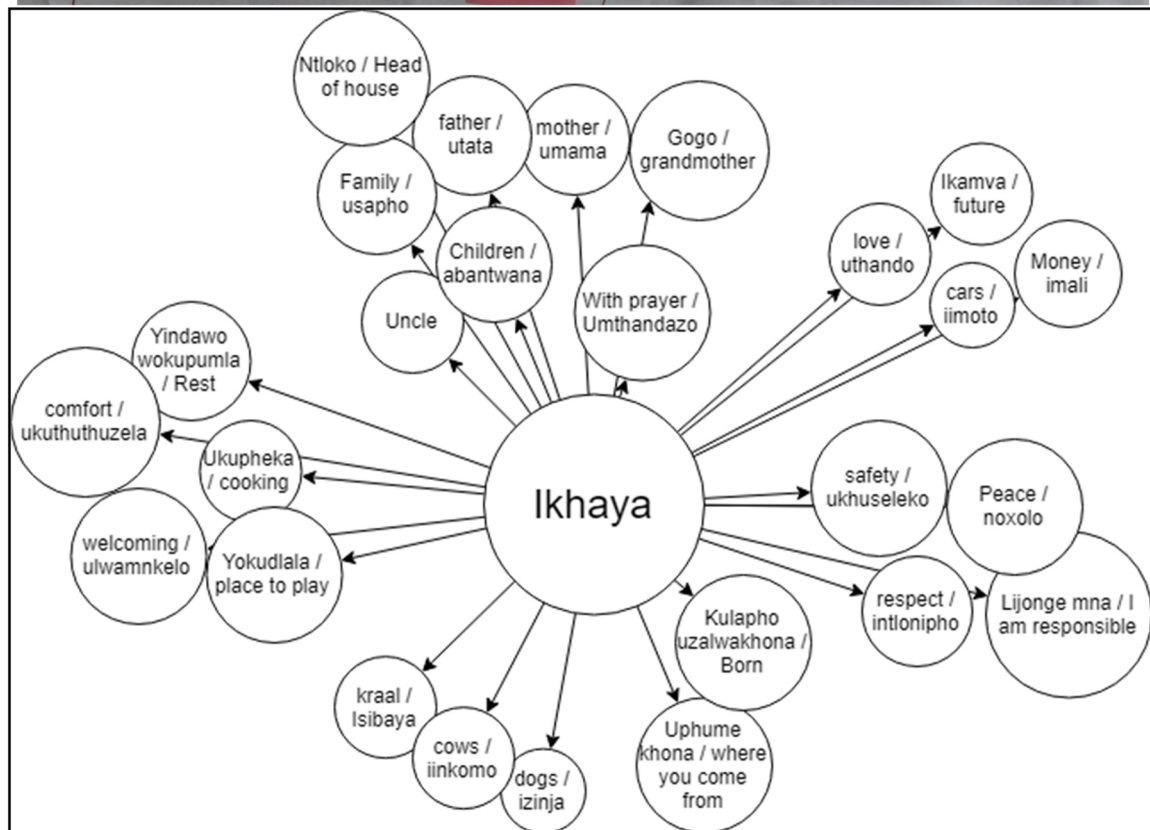
Each of twelve Learning Words workshops followed a core process: The meeting was opened with a song and prayer, followed by a welcome from the most senior elder present. Individual introductions followed, and Tsitsa Project team members explained the purpose of the workshop. Consent was requested for photographs and recordings. (As no dissent occurred, we did not develop a process for data collection that excluded recordings and photographs.) Participants were split into groups, ideally between five and ten people per group, with an isiXhosa-speaking member of the organising team facilitating each group. In early workshops, the primary language was English with isiXhosa translation. Later, this reversed, resulting in notably more vigorous participation. Facilitators used a flipchart or board with a large sheet of paper, and, using easily legible marker pens, wrote a starting word in both English and isiXhosa at the centre of the page. The first word was 'home' (English) / 'ikhaya' (isiXhosa). Each participant was given sticky-notes and ten minutes to write a range of other words or ideas (one per sticky-note) they associated with the given word. The notes were mixed and picked out randomly. People shared the content of the selected notes and discussion followed. The group clustered notes into self-defined categories to co-create a 'word cloud' (example given in [Fig. 3](#)).

Speaking from someone else's note promoted co-learning and reduced shyness in sharing ideas. Care was taken to unobtrusively support participants who could not write. When each group had a rich

Text Box 2

Inequities embedded in participation – a narrative of learning.

Engaged research, and specifically the methods of the Adaptive Planning Process ([Palmer et al., 2018](#)), within Strategic Adaptive Management ([Rogers and Luton, 2011](#)) are face-face, facilitated interactions, with the physical presence of, and interaction between participants and researchers. The recommended facilitation activities consciously address testimonial epistemic justice. Therein lies an ethical issue. Stakeholder groups generally include each level of government, the private sector, Non-Governmental Organisations (NGOs), civil society organisations, government implementing agents, and local people. In South Africa, especially in rural contexts, local 'community' people are collectively those impacted by formal unemployment, lower per-capita income, and less individual mobility. They are also the participants with no institutional support for direct participation costs (for example, transport). Participation by people from formal institutional structures are less likely to incur opportunity costs. Participatory governance seeks to provide opportunities for 'community voice', to counter power imbalances in respect of gender, race and age, but those with the fewest resources bear the greatest cost of participation. This ethical dilemma is amplified by the perceived and real problems with research 'paying for participation'. The Tsitsa Project provided transport and a meal with participatory events, but these are considered superficial benefits. The project was explicit in what it was, and was not, offering participants. Fundamentally, the participatory events offered opportunities to increase a knowledge base about natural resources, confidence in speaking in a group, and networking. It would seem that if government deems individual participation valuable for successful implementation of development policies, and an important aspect of deepening democracy, funds should made available through an accountable institutional channel to support the direct costs of participation - a process likely to be fraught with complications.



6

vocabulary around the key word, they moved on to identify and talk about links between words. Then two members presented the group outcome to everyone together. The presentations elicited interesting narratives about participant perceptions, which was a rich way for researchers (outsiders) to learn about the context. A similar cycle was repeated for more words, including 'river -umlambo', 'land - umhlaba' and 'water - amanzi'. The words were selected as both familiar and useful in describing the Tsitsa Project and its purpose. When later workshops included repeat-participants, we progressed to words for their groups such as 'restoration – ukulungiswa komhlaba'. As the energy from sharing familiar words increased, some people began to contribute without specific invitation, while the facilitator drew in more reticent participants.

At the end of the session, participants were asked reflective questions to help consolidate learning and explore the immediate value of the process (Wenger-Trayner and Wenger-Trayner, 2020). At various workshops, questions included:

- How did you feel today in this workshop?
- Why did you decide to participate?
- What did you learn today in this workshop?

3.2.3. Reflection

Participatory governance development activities included time and space for eliciting participant and researcher reflections. This was particularly important as preconceived notions of societal problems is a potential drawback of university-led transdisciplinary research processes (Wolff et al., 2019). Reflections created an opportunity to assess and evaluate progress, to co-learn and adapt methods and approaches, and to catalyse transformation in both researchers and participants. The Participatory Monitoring, Evaluation, Reflection and Learning framework (Rosenberg and Human, 2018) included a range of indicators linked to the Tsitsa Project theory of change. Social indicators were useful prompts in eliciting written reflections. It was important to notice participants with limited writing skills and to offer them alternatives, like stepping aside for a conversation and taking notes.

4. Results

4.1. Adapting the research question

The Tsitsa Project was created out of a collaboration between two South African government departments intimately concerned with the catchment. The Department of Water and Sanitation was considering the construction of two large impoundments on the Tsitsa River, as a large-scale infrastructure development project to deliver hydro-power and stimulate irrigated agriculture development (more details are available in Department of Water and Sanitation (DWS), 2018). The Department of Fisheries, Forestry and the Environment was focused on landscape restoration and ecological infrastructure protection (Cumming et al., 2017). The Department of Water and Sanitation had institutional arrangements for participatory catchment management through a national network of Catchment Management Forums (Munnik et al., 2017). The first Governance Community of Practice research question was: How can a Catchment Management Forum for the Tsitsa River Catchment be developed?

The link that drove government collaboration was the degraded catchment landscape and the high erosivity of the catchment, increasing the risk of high sediment loads and reducing the holding capacity of impoundments. Together, the departments negotiated a landscape restoration project to improve vegetation cover, thus reducing the risk of erosion and sediment delivery, promoting grassland recovery and grass-fed livestock production, and protecting ecological infrastructure. Unusually, the project was conceived as practical restoration informed by research, with the early conceptual framing of the project being innovative (Cockburn et al., 2018). A core finding is, therefore, that the

development of participatory governance was foundational for sustained landscape restoration.

The research process was envisaged as (i) engaging stakeholders through an Adaptive Planning Process workshop (Palmer et al., 2018) to co-create a restored catchment vision, co-learn about the catchment context, and co-develop an objectives hierarchy that would guide stakeholders to collaboratively build a Catchment Management Strategy, and (ii) a development workshop to stimulate the emergence of a Catchment Management Forum. Over two days, 75 stakeholders from national, regional, and local government institutions with an interest in land and water, commercial farmers and the forestry sector, NGOs, traditional leaders, and local residents convened.

Participants co-produced a list of their current concerns (Text Box 3) but recognising that these could not be addressed in the workshop, turned their attention to co-creating a vision for the catchment (Text Box 4). This progress seemed promising, but two significant barriers to progress emerged. Firstly, institutional development in the Department of Water and Sanitation stalled, so the establishment of a Catchment Management Agency failed to occur, leaving an institutional gap for Catchment Management Forum support. Officials from the Department of Forestry, Fisheries and Environment subsequently lost confidence that a Catchment Management Forum was the right vehicle for participatory land and water governance development. Secondly, ongoing analysis of stakeholder reflections from engagement in the Tsitsa River catchment, and in a more urban Eastern Cape setting (Ralekhetla, 2019), provided evidence of hermeneutic epistemic injustice within workshops.

After reformulation of research questions, research practice moved to explore pathways to build a common vocabulary and broad understanding of the Tsitsa River catchment landscape from multiple perspectives. The collaborative development of Learning Words began.

4.2. Building vocabulary and understanding

Learning Words became an increasingly creative workshop-based engagement with local people that achieved three functions: (i) developing 'Co-Knowing' capabilities by embedding a vocabulary and understanding of the Tsitsa Project among people in villages across the catchment; (ii) providing a foundation for the confidence, understanding and vocabulary to engage with the development of Listening and Speaking skills (the second phase of the Capabilities Pathway) essential for participation in formal governance contexts; and (iii) providing a context for community engagement with restoration implementation and livelihood development planning.

4.2.1. The Learning Words process

Participants of the workshops included village headmen, catchment residents, Tsitsa Project monitors, Community Works Programme employees, NGO representatives, and Working for Water implementing agents for the Department of Forestry, Fisheries and the Environment. Care was taken to invite and encourage a mix across gender and age, and in facilitation, the random invitation of participants to contribute reduced the cultural barriers to speaking that face, for example, women, youth and non-English speakers.

Responses to the question exploring feelings about the workshop elicited in formal written form and as informal, verbal feedback. The responses to this question were overwhelmingly positive. Some of the comments from a workshop held in Maclear in February 2019 included:

'The people were very welcoming and I was happy to be part of all the things we did in the 2 days of the workshop'.

'The people here were very respectful, everyone was given a chances to speak. When was time to talk, I was respected and did not worry'.

'I had confidence. I wasn't scared to ask and answer questions. The people here worked with us. There was no ridicule when somebody did not know'.

Text Box 3

Co-produced list of current stakeholder concerns. The English appears below with the isiXhosa version, recorded directly and included in [Supplementary material](#). The star (*) identifies concerns with strong links to landscape restoration.

-
- Dam- houses & fields flooded, grave sites, livestock access to water, littering, safety
 - Increased restrictions on water (Little Pot) usage – water for irrigation*
 - Soil Erosion – livestock lean – no food*
 - Education – old techniques of burning every year – try to alleviate soil erosion problems
 - Food / grazing for livestock (scarcity)*
 - Low water levels in Tsitsa in winter-challenge for livestock watering*
 - Veld fires – contribute to soil erosion after burn*
 - Security of dam – needs to be high
 - Lower rainfall and need to protect wetlands*
 - Local businesses used by / during dam construction?
 - Where is the dam water going?
 - No local clinic in area (upper Nzaku), Unemployment (youth)
 - Protect springs – littered / plastic / pampers*
 - Need multiple weirs and coffer dams
 - Unreasonable restrictions on agriculture
 - Preserve water quality – education – up & downstream*
 - Silt in dam – gullies near dam (Mount Fletcher dam example)*
 - Invasive Species Control*
 - How to get rid of wattle?*
 - Benefits to villages closest to the dam?
 - Rivers leading to dam – rules and regulations regarding water
 - Respect for traditional culture - abakhwetha – running water
-

Text Box 4

Co-produced Vision for the Tsitsa River catchment clearly links the outcomes of a restored landscape with social well-being and benefit.

Recorded directly as written in the Adaptive Planning Process workshop. The English appears below with the isiXhosa version in supplemental material: "The Tsitsa River Catchment will be sustainably and adaptively managed to improve the health of the veld and the rivers and therefore better livestock production, less erosion, and healthy people. Good political leadership will ensure transparent communication to all the people. Natural and financial resources will be used honestly to the benefit of all the people. Empowered, knowledgeable people will live in a safe, low conflict, well serviced, catchment."

'I am excited to work in a group and sharing ideas learning new thing and words moreover the purpose of why we protect our rivers'.

Reflections on why the participants decided to participate during the Learning Words Workshop (II) conducted in June 2019 at Hlankomo Traditional Council House in Village 5 located in the Tsitsa catchment included:

'During the workshop I felt relaxed and free to speak'.

'I saw how the other participants seemed free and relaxed'.

'I saw how other participants' contributions were taken into consideration'.

'The word 'home' that was discussed is important to me'.

'I felt that it was important to participate during the workshop'.

'I wanted to make an impact on change'.

'I understood what was being discussed'.

'I wanted to state my views on the topic being discussed'.

4.2.2. Outcomes

The primary outcomes of the learning words process are the intangible learning and sharing generated within the Learning Words process. Tangible outcomes also provided tools to expand the learning and meaning created. These tools include consolidated word clouds, where word clouds from different groups and sessions were combined into a single, rich word cloud (Fig. 4). The word cloud for 'catchment' is important because of the lack of direct translation into isiXhosa. Another useful outcome was the Learning Words dictionary (see [Supplemental material](#)), collected from the word clouds, and from reflections. The dictionary, when completed, will be available to villages.

4.2.3. Learning Words expansion

Tsitsa Project activities expanded spatially across the catchment, in a pattern related to areas where landscape restoration would deliver most benefit to livelihoods. The Governance Community of Practice followed, working in villages identified as restoration nodes. In a terrain where many villages are isolated and inaccessible, reaching a wide spread of people was a challenge. Training the Community Liaison Officers was a crucial part of the Learning Words expansion, and they organised venues and catering, and acted as group facilitators, supported by a more experienced facilitator.



Fig. 4. A consolidated word cloud showing all the words associated with the word Catchment. Catchment served as a base word during a second round, after a more accessible word like 'home' had been used to illustrate the process. The confusion around the word catchment is due to the lack of succinct translation into isiXhosa.

The concept of capability development, the use of the Capability Pathway, and the recognition of the value of Learning Words in capability development also expanded. Tsitsa Project activities across the catchment increasingly used a Learning Words activity as an introductory step, for example, in community-institutional mapping and ecological infrastructure mapping activities. Fig. 5 is an example of the village level institutional map that built on a word cloud. Text Box 5 is a transcribed translation of the group's presentation.

4.3. Increasing the likelihood of longer-term benefits from restoration

In the Tsitsa Project, a public works programme undertook the implementation of biophysical restoration, providing contract employment income. The Sediment and Restoration Community of Practice (Section 3.1.2) engaged with people living in villages across the catchment, to gather local knowledge in order to optimally locate biophysical restoration activities. The expansion of Learning Words workshops (Section 4.2.3) was facilitated in villages near the bio-physical restoration sites. Community Liaison Officers (Sections 3.1.2, 3.2.2, 4.2.3), key agents of participatory governance development,

participated in early Learning Words workshops, and were actively mentored into running the workshops in the expansion phase, embedding understanding of restoration among people in the catchment.

The next phase of implementing the Capability Pathway (Section 2.3), assuming available funding, would involve Community Liaison Officers increasingly engaging in traditional, local and provincial governance contexts. The phase would grow into a participatory governance network that effectively links residents and natural resource management and decision-making, beyond the current developmental stage for participatory land and water governance.

Beyond the formal findings that include positive feedback from participants in Learning Words workshops, we also noticed that participants from Learning Words workshops, who subsequently attended Tsitsa Project workshops on village planning and the prioritisation of restoration locations, had evidently thought about restoration issues more explicitly than when they were first engaged. Those who had participated in early Learning Words workshops were active in guiding new attendees, especially in explaining tasks in locally relevant ways. Participants also took opportunities to speak personally with members of the project, mentioning which causes of erosion they hoped the

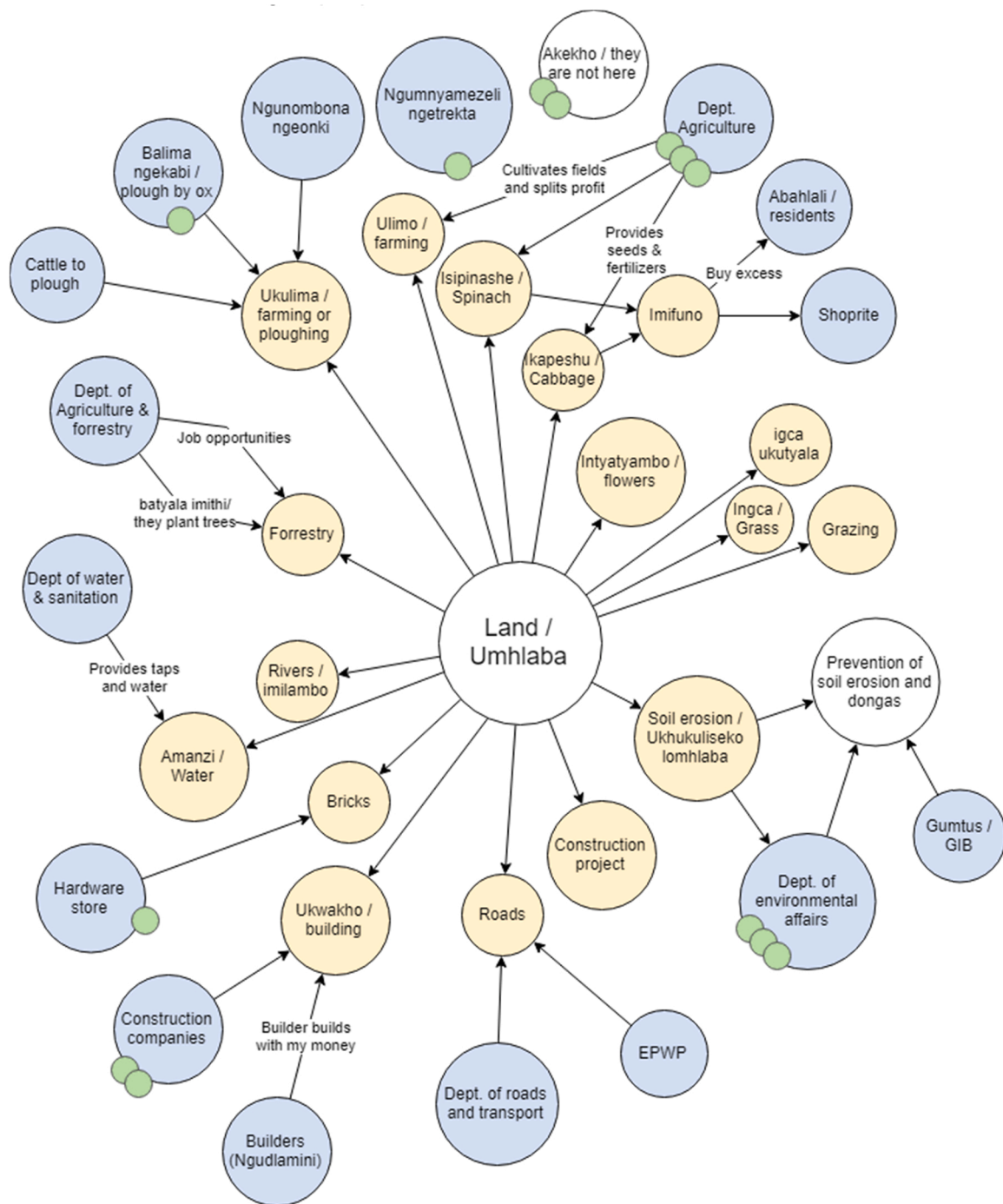


Fig. 5. A computer-generated version of a group's community-institutional map from a village called Upper Sinxako. Yellow circles are the words generated during the Learning Words process (Question: what do you associate with land?) and the blue circles are institutions (Question: who helps with land management?). The words generated during the Learning Words process guided the identification of institutions involved in land management. With this particular group, an extra variable was added. The green tokens rated different institutions on their perceived 'usefulness'. The diagram and the accompanying [Text Box 5](#) illustrate how the process was adapted to support different activities. (For interpretation of the references to colour in this figure, the reader is referred to the web version of this article.)

project would focus on. One participant declared that she has made it her mission to always mention her new understanding of the effects of burning the grassland to the traditional council. Over time, a broad spectrum of people associated with the project have consistently expressed commitment to the "Tsitsa Project approach", which is made accessible in a set of Practice and Policy briefs. The [Supplementary material](#) contains one such brief concerning sustained praxis.

5. Discussion

It is vital to consider the results of this research in the context of a large government-funded restoration project where the majority of investment went into biophysical restoration. Of the small proportion invested in research, socially-focused research received the least (albeit growing slowly over time). Since current land-use drives erosion, behaviour change is needed for restoration activities to remain

Text Box 5

Excerpts from a transcribed narrative associated with Fig. 5.

'The yellow faded colour is our WHAT. We started with soil erosion. The Department of Environmental Affairs helped us close all the places that have the potential to have dongas, and on top of that people were employed. We also have school from Department of Education who provide our children with education.... people were employed at the schools. We have a feeding scheme. Then we have sports grounds which we were supposed to be assisted by the Municipality, but nothing has happened. With our homes we are helped by Department of Human Settlements because they have built us RDP [houses] and a creation from jobs. We have scored this department higher because they are doing a good job. The department of Road and Traffic they maintain the roads with the people are employed on the road and at times they would grade the roads so we are able to walk on it but we have not score them high because we are not satisfied with their work. Drought is also something we spoke about, but we did not see anyone helping there. Also, Department of Agriculture who helps us with the planting... vegetables to sell to the community which is helpful because residents don't have to go to town and buy vegetables and save the return money for something else. Department of Forestry help with water, they have trucks that bring us water and we pay them. Then we have the Tsitsa River, we scored it the highest because we get water there for free, we don't ask anyone. Livestock we get them from Department of Agriculture with dipping tanks and immunisation. The wind is very destructive so we need trees pacify the strong winds the Department of Forestry is supposed to help, in fact if we had trees, we would not be worried much about the soil erosion that is happening. we have decided we will not score them because we don't have trees in our community.'

efficacious. This research forefronts the likely benefits of developing participatory governance, and the evident benefit of local people more clearly understanding restoration, and having the vocabulary express their views. With ongoing participatory governance development, local people will likely have more influence in managing the landscapes where they live. Globally, social-ecological research seldom accompanies landscape restoration, and we demonstrate that such investment catalyses the trajectory towards sustained social-ecological health and benefit.

Transdisciplinary research processes that engage more deeply in the social context of landscape restoration are still novel, and the lessons from this work are valuable. We found that the principles proposed by Palmer et al. (2015) hold, particularly: 'Manage discontinuities (people come and go, and arrangements change suddenly)'. The research reported in this paper initially addressed the question of whether a Catchment Management Forum can provide the kind of institutional space in the Tsitsa River catchment, suggested by Fleischman and Solorzano (2018) as necessary for the emergence of participatory governance. After a promising start with a broadly consultative participatory Adaptive Planning Process, the engagement and government-led institutional development process stalled. This stall created a major discontinuity that also constituted the 'window of opportunity' (Olsson et al., 2004) to co-create new questions with stakeholders. Crucially, the government department funding both the restoration implementation and the supporting research was committed to engaged, transdisciplinary research to catalyse change towards the project vision. Project progress was closely monitored and discussed with a high level of trust, and no barriers existed to formulating new research questions. Trust-relationships

in the catchment, through the catchment co-ordinator, further supported stakeholder engagement with reformulating the research question. This level of trust-based relationality is probably unusual, but should be sought-after for fruitful engaged research.

The discontinuity of funding security after Year 6 interrupted progress in 'co-listening and co-speaking' development among local government stakeholders and casted doubt on the institutional future for participatory catchment management in the Eastern Cape (Text Box 6). The concept of a 'window of opportunity' (Biggs et al., 2008) is relevant. Political pathways are characteristically discontinuous. The social networks among stakeholders - that include researchers, funders and participants - become repositories of social, relational, and knowledge capital. The social and knowledge capital built in the Tsitsa Project is embedded with the Department of Fisheries, Forestry and the Environment and is becoming embedded in their practice, whereas engaged work has not been established with the Department of Water and Sanitation. Local capabilities will continue to be exercised. Multiple partners will have agency to act when the next window of opportunity arises. Transdisciplinary praxis seems to require nimble navigation of a mosaic of windows of opportunity.

The motivation for participatory governance research within a landscape restoration project was that even a project planned to last a decade will end. The premise was that participatory governance capabilities among stakeholders can support long-term co-management of the catchment to the benefit of all stakeholders, including marginalised communities. This premise raises the question of whether participatory governance capability development can truly enhance the likelihood of realising longer-term benefits from interventions like landscape

Text Box 6

The future of the Catchment Management Agency and Forum.

In September 2021 the Eastern Cape Tsitsikama to Mzimvubu Catchment Management Agency (CMA) remains a 'proto-CMA' without full statutory status. In August 2021 an invitation was circulated by the proto-CMA to a meeting concerning the establishment of a Catchment Management Forum in the Tsitsa River catchment. The meeting was thrice cancelled at short notice and has been deferred indefinitely. As South Africa grapples with adversarial corruption-related politics, civil unrest, the ravages of the covid-19 pandemic, and an embattled economy, the establishment of new institutional spaces seem unlikely. Development of participatory governance capabilities among catchment residents is, however, a resilient adaptation. Those with capability are well placed to take advantage of future new institutional space, and to maintain participation in the existing institutional spaces. Tsitsa Project Practice and Policy Briefs communicate the 'Tsitsa Approach', including recommendations, to relevant government departments.

restoration. In the first six years of the Tsitsa Project, we envisioned the Capability Pathway, but only progressed to exploring 'Co-Knowing' more deeply. The material outcome was Community Liaison Officers leading Learning Words events across the catchment, and participating actively in Traditional Leader council meetings. We did not progress to working with local government stakeholders. The scale of progress demonstrates real timeframes of participatory governance development. Nevertheless, we suggest that the strong spatial linking of restoration practice with the development of a conceptual understanding of restoration, vocabulary capability, and empowered actors (Community Liaison Officers), lays a necessary foundation for longer-term benefits from restoration.

We therefore argue that the two critical and co-dependent dimensions for effective, equitable participatory governance development, are time and praxis. Where *praxis* is thoughtful, knowledge-informed practice - the actual sets of actions taken - that include the action of taking time to learn from our own and others' successes and failures. We advocate praxis that pays attention to principles of engagement (Palmer et al., 2015) and epistemic justice (see the "Praxis" brief in the [Supplementary material](#)).

As with any aspect of acting in a complex social-ecological system (Folke, 2006; Chaffin and Gunderson, 2016), effective praxis must be contextual. Where the purpose is to restore, manage and use natural resources to support fair and just human wellbeing over multiple generations, we face complex contexts (Swilling and Annecke, 2011; Cockburn et al., 2018). In the Tsitsa River catchment, this complexity has meant taking into account *assets*: good water, agriculture and environmental legislation and policy, and many motivated diligent people in government, commercial enterprise and civil society. Considering *challenges* is also important: a growing population; landscape degradation; the hard balance between profiting from and judiciously protecting natural resources; a polarising history of conflict and inequity reaching into currently volatile politics, that include systemic corruption; exacerbated by the global challenges of our day – pandemics, pollution and climate change.

The announcement of a large dam infrastructure project created uncertainty among upstream residents in relation to balances of cost (flooded lands and expropriations with no access to additional water for domestic or agricultural use) and benefit (short-term employment, roads, and possible increases in economic activity). In this context, the sustained presence, communication and trust-building effected by the Catchment Co-ordinator confirmed the value of investing time in the groundwork leading up to participatory governance development (Gustafson and Hertling, 2016; Godden and Ison, 2019), and the role of researchers as boundary agents (Visser and Kreemers, 2020).

Cilliers (2006) called for 'a certain slowness', and more recently Bixler et al. (2015) emphasised the importance of investing time into understanding the place-based and environmental histories where participatory governance processes are undertaken. Published evidence suggests, however, that longer-term persistence in praxis as in the Tsitsa Project is quite rare (Pollard et al., 2020; Palmer and Munnik, 2018). In the Anthropocene era of intense human interactions with Earth systems, there is resistance to processes that take time. We are exhorted to 'come into the real world', but it is exactly in the real world where assumptions of linearity, and rapidly and narrowly driven activities and processes drive the failure of interventions. Palmer and Munnik (2018) remarked that "*this is tortoise work*: ...[but] seems to offer the most promising pathway of substantive progress in engaging with the most difficult social-ecological problems facing humanity."

Facing the reality of what is necessary for the value of participatory governance to emerge, is supported by trajectories in the literature. These range from a sense of excitement at the possibilities of participation (for example, United Nations, 2007); through a record of concerns and caveats (Cooke and Kothari, 2001; Cornwall, 2008; Van Mierlo et al., 2013; Esben et al., 2017; Batory and Svensson, 2019; Rana and Piracha, 2020); to insights related to the nature of complex systems.

These insights include the concept of Bricolage (Cleaver, 2012), an emphasis on learning (Pahl-Wostl et al., 2008; Pahl-Wostl, 2017), and the role of agency and engagement in contested 'transgressive' spaces for transformation (Cleaver and Whaley, 2018; Kulundu et al., 2020). This constitutes a rich landscape of exploration.

6. Conclusions

The analysis presented in this paper permits answers to the three questions posed in the paper, from which we draw conclusions.

Question 1. *How do transdisciplinary researchers co-refine pre-formulated research questions?* The flexibility to reframe research questions requires i) researcher alertness to seeing discontinuities as adaptation opportunities, and ii) buy-in from funders to deviate from the Theory of Change and log-frame progress reporting that most grant-funded research follows.

Question 2. *How can researchers and stakeholders build vocabulary and a shared understanding of a place-based context?* The 'Learning Words' initiative was an adaptive co-creation between researchers and stakeholders when it became clear that hermeneutic epistemic justice was not achieved. The need for the adaptation highlights the pitfalls of assuming epistemic justice (Text Box 1). The Learning Words process, together with early 'Co-listening and Co-speaking' capability training, enabled catchment residents with no governance experience to participate in formal governance contexts such as traditional council meetings and to facilitate Learning Words across the catchment. The generalised lesson is to pay attention to the contextual meaning of 'Co-Knowing', by raising the question of what capabilities are missing for effective stakeholder participation, especially among marginalised stakeholders. The place-based process of 'Learning Words' emerged from attending to the 'Co-Knowing' stage of the Capability Pathway (Fig. 2). This process reaffirms Co-Knowing as a foundational step in participatory governance development. Paphitis (2018, p.370) argued: '*I think that much of the work that needs to be done in the academy is to understand how research practices can be harnessed to undo the epistemic injustice that has been perpetuated (and continues to be perpetuated) by academe*'. This is the work of Co-Knowing.

Question 3. *How does participatory governance development increase the likelihood of biophysical restoration delivering ecological and societal benefits?* Strong spatial linking between restoration practice and the development of a conceptual understanding of restoration, with vocabulary capability, and the nurturing and emergence of empowered actors (in this context, Community Liaison Officers), lays a necessary foundation for longer-term benefits from restoration.

Holistically, this paper discusses the imperatives of thoughtful praxis – learning by doing – and of appreciating the time frames necessary for effective engaged transdisciplinary research. We therefore advocate a 21st century paradox: in the Anthropocene era of pace and acceleration, effectiveness in the transformation of natural resource governance towards social-ecological justice, taking time to develop sound praxis is essential. Epistemic justice in participatory governance is supported by developing capabilities associated with confidence in using a relevant vocabulary.

Funding

This work was supported by the South African National Department of Forestry, Fisheries and the Environment: Natural Resources Management; and the South African National Research Foundation: *The Transformative Role of Participatory governance* Grant No: 116276. Margaret Wolff undertook her M.Ed in Education research during the first three years of the Tsitsa Project, and then became the Project Manager. Her contribution to Governance research, and her ongoing advice and input have been generous and invaluable. We appreciate the unstinting

support of Guy Preston, Christo Marais, Michael Kawa, Michael Braack, and Sarah Polonsky.

Declaration of Competing Interest

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

Acknowledgements

None.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at [doi:10.1016/j.ancene.2022.100320](https://doi.org/10.1016/j.ancene.2022.100320).

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