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A Relational Approach to Landscape Stewardship: Towards a New Perspective for Multi-Actor Collaboration

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Abstract: Landscape stewardship is increasingly understood within the framing of complex social-ecological systems. To consider the implications of this, we focus on one of the key characteristics of complex social-ecological systems: they are relationally constituted, meaning that system characteristics emerge out of dynamic relations between system components. We focus on multi-actor collaboration as a key form of relationality in landscapes, seeking a more textured understanding of the social relations between landscape actors. We draw on a set of ‘gardening tools’ to analyse the boundary-crossing work of multi-actor collaboration. These tools comprise three key concepts: relational expertise, common knowledge, and relational agency. We apply the tools to two cases of landscape stewardship in South Africa: the Langkloof Region and the Tsitsa River catchment. These landscapes are characterised by economically, socio-culturally, and politically diverse groups of actors. Our analysis reveals that history and context strongly influence relational processes, that boundary-crossing work is indeed difficult, and that doing boundary-crossing work in smaller pockets within a landscape is helpful. The tools also helped to identify three key social-relational practices which lend a new perspective on boundary-crossing work: 1. belonging while differing, 2. growing together by interacting regularly and building common knowledge, and 3. learning and adapting together with humility and empathy.

Keywords: boundary-crossing; integrated landscape management; multi-stakeholder collaboration; relational agency; relationality; social-ecological systems

1. Introduction

Landscape stewardship is gaining increasing traction as a way of bringing together a range of practices such as natural resource management, biodiversity conservation, ecological restoration, climate change adaptation, and sustainable agriculture and livelihoods [1–3]. Taking a landscape-level approach to this basket of interconnected sustainability practices is seen as a means of integrating

research, planning, policy, and practice towards more sustainable and equitable outcomes for the variety of actors interested in the landscape [2,4].

In parallel to these shifts towards more integrated approaches for working in landscapes, we see a growing interest in social-ecological systems (SES) approaches in the field of sustainability science [5,6]. SES approaches advocate for a more holistic, integrated understanding of how humans and nature interconnect, and call for more adaptive and learning-oriented approaches to thinking about and strengthening this connectivity in order to build resilience [7]. Resilience thinking and SES approaches have now also begun to inform landscape stewardship [8], leading to an increasing appreciation that landscape stewardship practices are embedded in social-ecological systems [9].

With this comes a growing focus on understanding not only the ecological but also the social dimensions of landscape stewardship [10] and the related fields of practice outlined above [11–14]. For the purposes of this paper, we draw on literature across the ‘sister fields’ of natural resource management, biodiversity conservation and ecological restoration, and on sustainability science more broadly, as they share a similar set of antecedent framings and place-based approaches. Moreover, they are often seen as integral components or practices within more broadly conceptualised landscape stewardship approaches [15]. Out of this growing body of conceptual and empirical work on the social dimensions of landscape stewardship has emerged a focus on relationality [16–18], that is, we are seeing a relational turn [19,20]. This has been accompanied by a rapid growth in literature on relationality in related fields like conservation [21] and sustainability science [18,22].

The purpose of this paper is to contribute a novel perspective on multi-actor collaboration for landscape stewardship through developing a relational approach, both conceptually and empirically. We do this through addressing four objectives, according to which we have structured the paper. Firstly, we begin by unpacking ‘a relational approach to landscape stewardship’: we consider what it is, why it matters, and what it means i.e., the implications of taking a relational approach. Secondly, we propose a set of tools from research in education and organisational learning. These tools form a framework that enables a more nuanced, relational analysis of the social relations between the many actors involved in collaborative landscape stewardship. Thirdly, we apply these tools to initiatives in two regions in the Eastern Cape of South Africa: the Langkloof region and the Tsitsa River catchment. We use an analysis of these cases to demonstrate the value of the tools in supporting research, learning and practice in landscape stewardship initiatives. Fourthly, building on the case analysis, we develop a new perspective on multi-actor collaboration.

2. A Relational Approach to Landscape Stewardship: What Is It, Why Does It Matter, and What Does It Mean to Take Such an Approach?

2.1. What Is a Relational Approach to Landscape Stewardship?

Relationality is a key feature of SES [23–25]. This means that systems are relationally constituted, i.e., they are what they are by virtue of the multiple, dynamic relations or interconnections which link the elements of a system together. In other words, the nature and functioning of SES are strongly shaped by the nature of the web of relationships in that system. This is not to say the nature of the elements is not relevant, but rather that the system emerges out of both the elements and the relations among them [25]. These relationships are between all kinds of elements of the system, e.g., human-to-nature, nature-to-nature, human-to-human, human-to-nature-to-nature, and so on, forming a web of relations (Figure 1). By foregrounding relationships, we can gain a better understanding of the “rich ground of practice that guides a system in ways that the formal rational designs do not explain” [24] (p. 1).

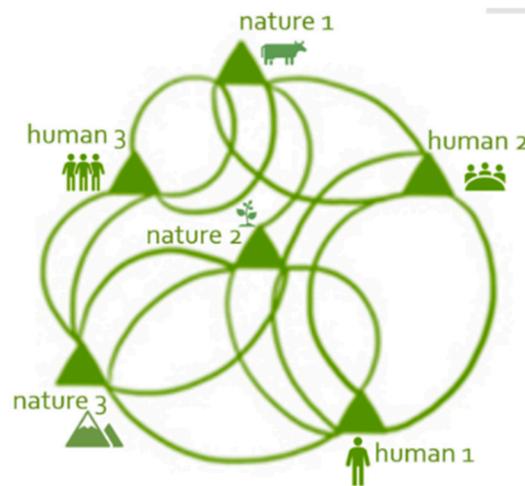


Figure 1. Social-ecological systems are relationally constituted [24,25] i.e., the web of multiple, dynamic relations between the various elements of the system make the system what it is at each given time.

The notion of stewardship, core to landscape stewardship practices, has been identified as a particular form of human-nature relationship, whereby humans interact with and use nature with responsibility and care [16,26]. Landscape stewardship requires the collective stewarding of large, multifunctional landscapes [9,27]. This necessitates the working together of a wide range of actors, often referred to as stakeholders, in order to share the costs and benefits of stewarding the landscape and its natural resources. The term stakeholder positions persons or groups as bystanders with a stake in someone else's initiative, while the term actor positions them as individuals or groups with agency or their own initiative. In the cases shared here, and we would argue, ideally in all stewardship initiatives, researchers and development practitioners should relate to farmers, villagers, extensionists, government, industry and other roleplayers in the landscape as actors, in recognition of the way in which their decisions and (in)actions shape what happens in the catchment. Consequently, within such landscapes there are not only multiple human-nature relationships, but also multiple human-human relationships which operate across multiple scales and which hold memory, therefore making relational landscape approaches important [16,19]. The following are a few practical examples of these multiple and intersecting relations in landscapes, each of which is embedded in an on-going, dynamic, relational process:

- Livestock grazing in rangelands: a relational process which includes relationships between the animal and the grass it eats, relationships between the animal and the herder, relationships between the herder and the land, and relationships between the many livestock owners and herders across the landscape who share the rangeland resources.
- Water licensing for catchment management: a relational process which includes relationships between water users (e.g., farmers) and the government officials mandated to issue licences, between the farmers and the water source (e.g., a river or groundwater), between upstream and downstream users along the same river, and between the government officials and the wider institutional context in which they operate.

These examples not only illustrate that to bring about effective, sustainable, and equitable landscape stewardship requires then not only the development of more sustainable human-nature relationships [19], but also a focus on understanding and supporting the interactions of multiple human actors across the landscape [16] which would in turn impact interactions with land. In this paper we focus on the latter, paying attention to multi-actor collaboration as a key form of relationality in landscapes.

By virtue of the kinds of sustainability challenges that emerge in the pursuit of landscape stewardship (e.g., catchment management or fire management), multi-actor collaboration often results

in the formation of networks of people from diverse backgrounds who have not worked together before [28,29]. Landscape stewardship initiatives bring together for example farmers, livestock owners, government officials, researchers, and NGOs who all play different roles in the landscape. While these actors all potentially share an interest in the landscape as a whole, each has different interests in the system, and comes with differing backgrounds, values, expertise, knowledge, and cultural practices. These actors are also located within a particular historical context of the landscape [17]. This means that collaborating for landscape stewardship is boundary-crossing work [30], whereby the different actors need to acknowledge the relevance of working outside of their usual domain (e.g., a farmer managing his farm, or a researcher working in the university) to work together to steward the landscape.

2.2. Why Take a Relational Approach?

Our motivation for proposing a relational approach to landscape stewardship emerges both from practical, empirical experiences of place-based landscape studies (see for example Cockburn et al. [16], Cockburn et al. [31], Pollard et al. [32], Palmer et al. [33], and Shackleton et al. [34]), and from the philosophical orientations which underpin our approach to landscape stewardship. The practical, empirical experiences speak to *relational practices*, whilst the philosophical orientations speak to *relational ontology and epistemology*. We discuss each of these in turn below to make the case for a relational approach from both perspectives, and then unpack the implications of a *relational approach*—which is a bringing together of *relational practices* and *relational ontology and epistemology*—for landscape stewardship and sustainability science more broadly [25,35].

2.2.1. Making the Case for Relational Practices: Practical and Empirical Insights

At a practical, everyday level, we can see that it is important to have interpersonal relationships with others to enable collaboration and collective action, i.e., that humans are fundamentally relational beings, and that society is relationally constituted [36]. People's engagements with the world and with each other is shared, overlapping, and relational [37]. For example, small-scale farmers often collaborate and form co-operatives to share agricultural input costs and access markets for their produce. Similarly, the collaborative management of shared natural resources in landscapes is an ancient practice, and is well-documented and researched for example in Ostrom's Nobel-Prize winning research on common pool resource management [38]. In large, multifunctional landscapes characterised by a diversity of intersecting ecosystems and natural resources, and a diversity of actors and institutions with often conflicting interests in the landscape, collaboration becomes more difficult [9]. The web of relations becomes more complex, and understanding and navigating the social-relational dynamics among diverse actors becomes even more important [16,39], highlighting the need for relational approaches in landscape stewardship.

2.2.2. Making the Case for Relational Ontology and Epistemology: Philosophical Arguments

The above discussion draws on practical knowledge to make the case for relational practices, which might be particularly resonant and relevant for on-the-ground practitioners and landscape residents. However, as researchers (particularly those pursuing transdisciplinary modes of research [40]), we also have a responsibility to consider the philosophical underpinnings of our research and how these influence how we view the world, i.e., ontology, and how we generate knowledge in, of, and with the world, i.e., epistemology [41,42]. In this study, our overarching ontological position is a view of the world as an open, multi-layered, complex system. We draw on complexity theory [25,43] to underpin this. We have argued above that landscape stewardship is embedded in SES. SES are considered as complex adaptive systems [5,23]. A complexity ontology has important implications for epistemology, methodology, and everyday practice, as argued by Preiser [25] (p. 711):

“As much as complexity thinking provides us with tools and models for observing and analysing the interactions and effects of complex systems, it also provides a worldview into the nature of complexity and how it is experienced in our everyday encounters of living in an ever-changing world.

Complex systems thinking challenges commonly held assumptions about the nature of a problem and conventional solutions that are based on control and demand-based planning and decision making approaches and anticipates surprises and accepts that there are no quick fixes for solving complex real world problems.”

Consequently, relationality is an important lens through which to study or know (epistemology) the world more deeply, and to be (ontology) or act in it more coherently [44]. Relationality gives us praxiological power: to understand people and nature and practice in context and in relation with one another [24], and to work with people with an openness to change i.e., through a transformative perspective.

2.3. What Does It Mean to Take a Relational Approach in Landscape Stewardship and Sustainability Science?

So, what does it mean to take a relational approach to landscape stewardship specifically, and to sustainability science more broadly? Here we identify at least three implications of such a relational approach.

Firstly, taking a relational approach means doing research differently, i.e., understanding things in a more interconnected way, and ensuring that not only the elements of the system are studied and interrogated, but also the relations within a system. It also means seeking relationality within and among disciplines and supporting and conducting interdisciplinary and transdisciplinary research [35,45].

Secondly, it means engaging, intervening, and acting differently, i.e., it is often when there is a breakdown in the relations between things that problems arise, and so we need a relational lens to see these absences and ‘absent the absences’ [44,45]. This gives a fundamental, causal property to relationships [24], and can help us better understand the way we can intervene and work with actors to address issues within the context of landscape stewardship, social-ecological systems, and beyond.

Thirdly, it means working in more nuanced and relational ways with widely-cited notions such as multi-stakeholder or multi-actor collaboration. This means going beyond the conventional focus on elements such as institutions [46], or individuals (e.g., studying individual values or behaviour is often the focus of social science research in conservation [47]), to understanding the relationality at play in collaborative processes, and how this is deeply situated in complex SES [9,16,24,48]. A relational approach also enables one to see beyond a certain space and time and reveals a cross-scale picture of historical and future relationships [25,49].

For the remainder of this paper, we focus on this last implication of a relational approach to landscape stewardship, exploring theory developed in the field of education and organisational learning research to deepen our understanding of relationality in multi-actor collaboration for landscape stewardship.

3. Framing and Methods for Case Study Analysis: Analysing Relational Cross-Boundary Work

3.1. Introduction to the Gardening Tools

Whilst there is a burgeoning of social science research within the fields of landscape stewardship and sister fields in sustainability science and SES research [10,47,49–52], there have also been critiques of the superficial way in which ‘social’ or ‘human’ dimensions have sometimes been treated in these fields [20,24,48,53,54]. We seek to respond to some of these critiques by bringing theory from social science fields, in this case education and organisational learning research, into sustainability science and SES research to strengthen our understanding of some of the social-relational dimensions of the work (Table 1).

In studying boundary-crossing collaborations, Edwards [30,55,56] has identified a set of conceptual tools to guide analysis of collaborative processes, which she calls ‘gardening tools’. Edwards explains the gardening tools metaphor as follows: “The metaphor reflects the comment from two Norwegian researchers in the field of public management, that horizontal working between agencies needs ‘... cooperative effort and cannot be easily imposed from the top down’ so that ‘the role of a successful

reform agent is to operate more as a gardener than as engineer or architect' [57] (p. 1063). This metaphor applies equally to the multi-actor work of collaborating for landscape stewardship, where actors are cultivating new ways of working, new practices, and new relationships [16], just as gardeners cultivate gardens.

We use the gardening tools both for analytical purposes, and to support planning and facilitation of landscape stewardship practices. These tools comprise three key concepts: relational expertise, relational agency, and common knowledge (Table 1), which are three specific dimensions of boundary-crossing.

These three concepts have been developed by Anne Edwards and colleagues to support research in a variety of boundary-crossing contexts of professional practice, as she says we "need to examine in some detail how collaboration is nurtured in these spaces" [56] (p. 35). Examples of these contexts include: social workers, parents, and teachers collaborating to support children struggling with social exclusion [30]; early childhood educators, maternal and child healthcare workers, and after-care providers collaborating in early years multidisciplinary networks [58]; and nurses, psychologists, and social workers collaborating to support new parents experiencing difficulties in adjusting to parenting [59]. To our knowledge, these conceptual or framing tools have not yet been applied in an SES context. In Table 1, we provide definitions of the tools used by Edwards, and re-worked definitions for the landscape stewardship contexts we studied.

Table 1. The 'gardening tools' to support the boundary-crossing work of multi-actor collaboration in landscape stewardship, based on Edwards [60,61].

Gardening Tool or Concept	Edwards' Definition [56,58,61]	Our Re-Worked Definition in the Context of Landscape Stewardship
Relational Expertise	The capacity to interpret problems with others; joint problem interpretation which can lead to joint response; "know-who" [62] i.e., knowing how to know who can help.	'Knowing how' and 'knowing who' together: i.e., Our shared 'know-how and know-who': the different landscape actors appreciating and recognising the value of their own and others' expertise in being able to understand and address the complex problem; they have a shared understanding of who can help and how they can help with the particular problem in focus.
Common Knowledge	Using the common knowledge to guide the taking of action with others; a respectful, shared understanding of different professional motives; a resource to mediate responsive collaborations on complex problems; "transfer, translation and transformation of knowledges across differences" [58] (p. 381), at sites of intersecting practices.	Knowing together landscape actors develop a shared understanding of what matters in their collaboration, by bringing together their different motivations, values, and understandings of the common problem; they appreciate what matters from each of their perspectives and together build an understanding of what matters and is important for the network/collaboration. Main difference between relational expertise and common knowledge: relational expertise is about who knows how to do things, and who knows who can help; common knowledge is new knowledge developed together about the common problem.
Relational Agency	A capacity for working with others to strengthen purposeful responses to complex problems: building a collective strategy or action.	Doing together: landscape actors develop strategies, implement new practices, and act together in ways that they could or would not have acted in isolation from one another.

3.2. Method

Our method for analysing the case studies is based on a case study design using a realist qualitative approach to analysis, which recognises the role of context in causal explanations about phenomena [63]. We took an iterative, step-wise approach to analysis, using the three gardening tools (*relational expertise*,

common knowledge and relational agency) as an analytical framework to look at our cases from a different perspective. The authorship team, composed of researchers and practitioners involved in the two cases, conducted the analysis together over a series of workshop sessions, and iterative development of the manuscript. We took the following steps in the analysis:

- Step 1: Preparation of case material in the form of structured case descriptions (see Box 1 and 2).
- Step 2: Familiarisation with and contextualisation of the analytical framework: re-description of the gardening tools for our context of landscape stewardship (see Table 1).
- Step 3: Application of the gardening tools framework to the cases—Round 1: Drafting an initial set of analysis notes and insights for each of the three gardening tools within each case (first by case experts, then by the team as a whole). Guiding question for Step 3: *What do we learn when we think about <insert name of gardening tool> in this case?*
- Step 4: Application of the gardening tools framework to the cases—Round 2: Refining analysis notes and insights for each of the gardening tools within each case (Table 2).
- Step 5: Application of the gardening tools framework to the cases—Round 3: Stepping back from the details of each case and analysis of the gardening tools separately to look for cross-cutting insights and learnings, and discuss these in light of the literature on relationality (Section 5.1). Guiding question for Step 5: *Across the gardening tools framework as a whole, across both cases, and from this experience as a whole, what has struck you as particularly interesting and insightful? What have you learnt about multi-actor collaboration that you had not seen or thought of before?*

Table 2. Key findings from case analysis using the gardening tools framework (see Table 1 for definitions of gardening tool concepts).

Cases → Gardening Tools ↓	Case 1: Langkloof Region	Case 2: Tsitsa River Catchment
Relational Expertise	<ol style="list-style-type: none"> 1. Participants in the working group are realizing that to understand the problem of honeybush cultivation fully requires different interpretations of the problem, and members are becoming more aware of who the other experts are, beyond the ‘usual technical suspects’. 2. Living Lands created important boundary-crossing opportunities for the emergence of relational expertise by bringing participants together beyond the usual group of technical experts, e.g., they also brought in nursery managers (ex-farm workers) and farm workers. 3. Some forms of expertise were initially marginalised, and power asymmetries made the building of relational expertise difficult (e.g., the nursery managers, who were previously farm workers, were considered to just be there to provide manual labour during field visits, but are now sitting around the table during discussions, thanks to careful facilitation of the process). 	<ol style="list-style-type: none"> 1. After 4 years of interaction around integrated planning for landscape restoration, there is evidence of relational expertise emerging: e.g., scientists recognising the value of local land users’ knowledge in identifying priority sites for restoration; researchers from different disciplines starting to value each others’ expertise; municipal officials asking researchers for input in spatial planning. 2. There is a growing familiarity of the range and scope of experts working in the catchment adding to ‘knowing who can help with what’, along with a growing recognition of the importance of bringing people into a room together to build such relational expertise and a collective sense of belonging. 3. There are however still big disparities and power dynamics in how knowledge is shared, e.g., language barriers; and a lack of engagement by some key actors; scientific knowledge is still treated as superior by some actors.

Table 2. Cont.

Cases → Gardening Tools ↓	Case 1: Langkloof Region	Case 2: Tsitsa River Catchment
Common Knowledge	<p>1. Common knowledge is superficially built on the broader common goal of improving knowledge of honeybush cultivation in order to grow production across the industry as a whole, i.e., everyone knows that they need to combine their knowledge and experience to achieve the goal of increasing honeybush production. This helps to build a shared sense of identity and belonging.</p> <p>2. There is still lack of deeper understanding of how different participants will benefit from the working group, and there are different underlying motives at play, i.e., as yet there is not much respectful, shared understanding of different personal or professional motives.</p>	<p>1. Participatory mapping and integrated planning activities created a platform for building common knowledge around landscape restoration: there is a growing shared recognition of the importance of involving local people in mapping and planning, which helps to develop a shared understanding of what matters in the landscape.</p> <p>2. A shared interest in landscape restoration offers a boundary object for developing common knowledge, but different actors still have different underlying motives which have not yet been acknowledged, e.g., Traditional Leaders are looking for jobs for their communities, researchers need to produce research outputs, implementers need to produce measurable outputs, resulting in tensions between different actors [31].</p>
Relational Agency	<p>1. Relational agency is not yet evident in the working group: the initiative is still in the early stages and the ‘doing together’ will take time to develop. Trialing cultivation practices together offers some promise in this regard.</p> <p>2. The diversity of actors and the differences in race, class, age, level of education, etc. mean that much time needs to be spent on building relational expertise and common knowledge before relational agency can emerge between the diverse actors.</p> <p>3. If we extend the gaze to Living Lands and how they have been working in the landscape more broadly, we see evidence of relational expertise, and the development of common knowledge between themselves and some of the landscape actors. This has enabled them to take action to establish the working group as a response to the problem of different role players in the catchment not collaborating around the need to expand honeybush cultivation. Their knowledge and understanding of the various stakeholder informed their careful putting-together of working group participants.</p>	<p>1. Prioritising, mapping, and planning together for the restoration of the catchment is an early form of relational agency. While researchers have started working more meaningfully with some local residents, this has not yet gone far enough as some actors are still not participating (e.g., commercial farmers). Also, this is not yet happening across the whole catchment, i.e., it is happening in localized pockets.</p> <p>2. This early stage relational agency is being mediated by researchers who are not from the catchment: it should really be driven by local residents and restoration implementers. Moreover, we are yet to see relational agency emerge in the actual <i>implementation</i> of restoration plans. However, we acknowledge that there may be relational agency present (or emerging) in spaces which we as researchers in the project have not yet explicitly ‘looked into’ e.g., at the level of local restoration implementers and how they work with residents as restoration workers on the ground.</p>

4. Case Studies: Applying the Gardening Tools to Analyse the Langkloof and Tsitsa Cases

4.1. Overview of Cases

The two cases were chosen as examples of landscape stewardship in which multi-actor collaboration is an intended purpose of the initiative, yet participants are finding collaboration challenging [17,31] (Box 1 and 2). We present the cases by giving an outline of the social-ecological context of each case and its objectives, and by providing a specific focus around a shared matter of interest or ‘object of activity’ (‘Object of activity’ is a term used in Cultural Historical Activity Theory, which underpins Edwards’ work on the gardening tools [55], to denote the complex problem which is the focus of collaboration [56].) around which actors are actively collaborating within each case (Box 1 and 2) (Note: ‘Object of activity’ is a term used in Cultural Historical Activity Theory, which underpins Edwards’ work on the gardening tools [55], to denote the complex problem which is the focus of collaboration [56]). In the case descriptions, we also identify the key actors involved in the collaboration, and specific boundary-crossing challenges experienced.

4.1.1. Case 1: The Langkloof Region: Building Capacity and Collaboration for Integrated Landscape Management through Sustainable Honeybush Tea Cultivation

- What is the social-ecological context of the landscape stewardship initiative?

The Langkloof is situated in the Eastern Cape Province, South Africa. It is an agricultural area which mostly consists of commercial fruit production [64]. The landscape is socially and ecologically heterogeneous, with high diversity in terms of the economic, socio-cultural, and political background of people living in the landscape (Figure 2) [17]. Social groups are dynamic and diverse in ethnicity. There is contestation around access to land and water resources among historically disparate groups, i.e., ‘white’ commercial farmers and ‘coloured’ people whose ancestors were dispossessed of land [17]. The area has high biodiversity with many endemic species. The case presented here is based on the work of a local not-for-profit company, Living Lands, who facilitate collaborative landscape stewardship activities across the landscape [17,65,66].



Figure 2. Left: The Langkloof or “long valley” with its fynbos-covered mountains and apple orchards in the valley bottom. Right: Honeybush Working Group meeting where a diverse group of stakeholders gathered to learn about soil health in a field of cultivated honeybush.

- What is the shared matter of interest or ‘object of activity’ on which this study focuses?

Whilst Living Lands is involved in various landscape restoration and sustainable agriculture activities, the focus of this study is on sustainable cultivation of honeybush tea. Growing wild in the mountains, indigenous honeybush (*Cyclopia* spp.) is both wild harvested and cultivated on a small scale to produce herbal tea. This is an emerging industry, with increasing demand for honeybush such that current wild populations cannot satisfy this demand [67]. Cultivation of honeybush is seen as a possible solution to create sustainability in the industry (and much-needed employment), however knowledge of this undomesticated plant is scarce [67]. Living Lands has set up an informal working group (‘honeybush cultivation working group’) to support farmers and others in the industry by

providing a platform to share knowledge and build social capital. The working group offers a space for multiple diverse actors to come together around honeybush cultivation as a shared matter of interest and thus 'boundary crossing' is taking place within the working group.

- Who are the actors involved?

Living Lands act as the facilitator of the working group. With many connections across the industry, Living Lands has the ability to bring diverse groups of people together and broaden and deepen knowledge-sharing. Researchers are involved in the group and contribute by creating knowledge about the resource itself, and about the social systems linked with the resource and industry. Expert consultants in specific aspects of cultivation, such as soil experts or cuttings experts, are invited to share their knowledge with the working group. Technical knowledge about the cultivation of the plant is contributed by farmers and honeybush seedling nursery managers, who are also part of the cultivation group. Farmers have been encouraged to bring their farm workers along. It is important to note that the nursery managers (supported in this new work by Living Lands) were themselves previously farm workers. Their involvement in this new job and in the working group has been a shift in their identity and role in this community.

- What are the boundary-crossing challenges and opportunities?

The working group offers a platform for people from diverse knowledge systems to share knowledge and experience on honeybush cultivation, providing opportunities for social learning. During workshops, different methods for cultivation are trialed and knowledge is co-produced through activities undertaken together by the members of the group. This group was created around the common challenge of successful honeybush cultivation. Through this common challenge, members identify with each other to develop a shared sense of purpose. This group contributes to building relationships across the industry and trust-building between different levels of trade, which is crucial for upscaling in the future. A shared sense of responsibility in the group reduces the fear of failure at an individual level and builds confidence. However, differences in class, race/ethnicity, education, socio-economic status, and language pose significant challenges to the aspirations of the group.

4.1.2. Case 2: The Tsitsa River Catchment: Striving for Sustainable Landscape Management and Rural Livelihoods Development through Integrated Planning

- What is the social-ecological context of the landscape stewardship initiative?

This case is situated in Tsitsa River catchment, a tributary of uMzimvubu River, in the Eastern Cape Province, South Africa. The catchment is located in one of the poorest, most ecologically degraded, and least developed regions of the country: the former Transkei homeland (Figure 3) [68]. Residents of the communally-governed areas rely on subsistence farming and grazing, natural resource use, and government social grants for their livelihoods, while commercial farming is carried out in the freehold area [68]. The case is based on the work of the Tsitsa Project (TP). The TP is a science-based social-ecological land restoration and livelihoods development programme which seeks to foster multi-actor collaboration and polycentric governance [31]. It is funded by the Department of Environment, Forestry, and Fisheries (DEFF). The project was initiated to reduce sedimentation of two large dams proposed for the uMzimvubu River, but has now shifted to a more holistic focus on managing the landscape for a variety of social-ecological outcomes, including local livelihoods.

- What is the shared matter of interest or 'object of activity' on which this study focuses?

Key matters of shared interest in the Tsitsa Project (TP) include: polycentric governance, integrated planning for landscape restoration, grazing management, and landscape sustainability for livelihoods. In this case we will focus primarily on integrated planning for landscape restoration as a shared matter of interest around which multi-actor collaboration and boundary crossing is taking place. Integrated planning was seen as the best opportunity for researchers, managers, implementers, and communities to collaborate towards sustainable landscapes and livelihoods.



Figure 3. Left: The Tsitsa Project located in a highly erodible, degraded landscape in which local people are reliant on natural resources for their livelihoods. Right: Participatory mapping of priority areas for restoration to inform integrated landscape planning has been a key boundary-crossing activity facilitated by the Tsitsa Project.

- Who are the actors involved?

Researchers from Rhodes University coordinate the project. There are many actors in the Tsitsa River catchment involved in various activities related to integrated planning include local residents, Traditional Leaders, government officials, scientists, natural resource managers, restoration implementing agents, development agencies, etc. The areas of influence of the various actors overlap to some extent, leading to synergies and tensions [31]. Over time, the TP has been bringing the various actors into shared spaces to develop a common vision and align activities to avoid further tension and duplication, and to share resources and knowledge. Integrated planning meetings and participatory mapping activities with local residents and Traditional Leaders [69] have been a key focus of this work.

- What are the boundary-crossing challenges and opportunities?

Integrated planning requires people with different skills, experiences and levels of education to work together and plan collectively. While this is a significant opportunity to manage the landscape for sustainable and equitable outcomes, it is also fraught with challenges. The work of the TP is characterised by the intersection of different sources and types of knowledge, including local ecological knowledge based on lived experience as well as scientific knowledge based on global literature, models, remote sensing, and statistics. The project is also characterised by intersections of different languages: actors speak isiXhosa, Sesotho, Afrikaans, and English, which leads to difficulties in effective communication and relationship building. Land tenure differences are also a boundary-spanning challenge: there is both communal and freehold land.

4.2. Key Findings from the Case Analysis Using the Gardening Tools Framework

We now apply the three gardening tools to the two cases of landscape stewardship in the Eastern Cape of South Africa: the Tsitsa River catchment and the Langkloof Region. We begin by sharing insights from each of the cases on the gardening tools, including key points summarised in Table 2. In Section 5, we then go on to discuss some key cross-cutting findings in relation to the literature to propose a new perspective on multi-actor collaboration for landscape stewardship.

4.2.1. Case 1: Langkloof Region

To apply the gardening tools to the honeybush cultivation working group (‘working group’), it is crucial to understand the current relationship dynamics in the region. A long history of discrimination in the area as a result of South Africa’s colonial and Apartheid history has caused fragmentation of social groups and an unequal balance of power and access to resources [17,70]. Unequal power relations come about through unequal representation and recognition of people from different ethnic or race groups, economics class, age, and level of education within the working group [17]. Relationships between people are therefore in different stages: members from the same ethnic group and similar levels of power develop relationships faster than across ethnic groups and levels of power. The same

applies to the manner in which the boundary-crossing dimensions (i.e., relational expertise, common knowledge, relational agency) are realised within the group.

When we look at the process and nature of relationships during the development of the working group, evidence of the three boundary-crossing dimensions can be recognised in different pockets or sub-groups of 2–3 people within the group over time. During workshops, for instance, working group members visit each other's farms. For individual farmers (from the same ethnic group), this experience creates recognition of their own knowledge, place and situation within the broader system of other farmers. This leads to the augmentation of the specialist knowledge for each farmer, even though it is limited to one type of actor in the group. Before the working group was established, farmers did not realise that they have any knowledge to share, but during this process, they recognised that they have built their own specialist knowledge through experience and that it is useful knowledge for the working group as a whole. However, this same acknowledgement of knowledge is not necessarily extended to more marginalised members of the working group, i.e., the nursery managers and farm workers (Table 2).

The building of *relational expertise* is a slow process with many steps. The nursery managers, for instance, are younger and from different ethnic groups and economic classes than most of the other group members. At the first workshop, they arrived in workers' clothing and took on the role of manual labourers, rather than equal contributors of knowledge and expertise. Within the next few workshops, progression could be seen in the way they dressed (wearing more formal 'meeting clothes') and contributed to the workshop, each time with a little more recognition of their role and contribution of their knowledge to discussions. Initially, they would sit aside from the main group, and as things have progressed, they have become more comfortable sitting 'at the table' with the main group. These actors are, however, still marginalised and have not entirely found their voice within the group in terms of building common knowledge. As people who themselves, and whose families (historically), have engaged in honeybush farming activities, they have important practical and local knowledge to contribute, but their identity as 'workers', and the way they are marginalised, makes the bringing in of this knowledge to form 'common knowledge' a significant boundary-crossing challenge.

Some of the consultants who joined the group had a well-established sense of their own expertise, but did not realise that they would learn from others in the group. For instance, one consultant noted that he learned a lot from the farmers' practical knowledge, which greatly contributed to the theoretical knowledge he had built over the years.

Common knowledge has developed within the group around the common goal, which is to successfully grow honeybush and find a consistent market for high-quality honeybush. Everyone, therefore, has a shared interest to combine efforts and experience to achieve this goal. This common knowledge, however, is still very superficial and finer nuances with regards to a shared appreciation and understanding of each member's motivation for joining the group is still lacking.

The development of *relational agency* has also been limited to ethnicity and power level. In practice, farmers, researchers, and 'Living Landers' are trialling cultivation methods together, and this shows potential for the development of relational agency. Pockets of relational agency can be recognised when looking at a larger time frame which includes the process of relationship-building before the working group was set up, as well as after it was established.

4.2.2. Case 2: Tsitsa River Catchment

The Tsitsa Project was introduced as a top-down project that focussed on multi-actor collaboration as an outcome, with limited focus in the early stages on a process-oriented approach to building relational expertise and common knowledge needed to realise this. The latter approach developed over the years in response to the reduced focus on reducing siltation of the proposed dam, and a shift to improved overall catchment management to support local livelihoods [31]. Now, 5 years after the start of the project, with an enhanced research presence in the catchment, we are starting to see some evidence of relational expertise and common knowledge, and are in a better position

to use these gardening tools more effectively to analyse and guide the collaboration. Central to this is trust-building, frequent interactions with actors (often in informal settings), and planning and working together to achieve goals that all actors feel comfortable with. The legacy of apartheid and colonialism has contributed to slowing this relational development as there are significant social and power differentials between and among actors associated with ethnicity/race, class, language, culture, knowledge system, land tenure, etc. [31].

Evidence of *relational expertise* can be seen in the Tsitsa Project in at least two examples of researchers engaging with other actors. Firstly, in the way in which researchers and restoration implementers are collectively expanding their understanding of the common problem or ‘object of activity’ of land restoration and integrated planning. The implementers (Gamtoos Irrigation Board, GIB), suggest restoration interventions, these are agreed upon by the Traditional Leaders, and then submitted to researchers. The researchers then suggest if those interventions are suitable for the relevant areas based on their scientific understanding, type of soils and other biophysical features of the landscape. After suggestions from researchers, GIB revise their plan and submit it to the DEFF for final approval before they commence implementing restoration. In a second example, researchers have employed participatory mapping processes to collect and collate knowledge from the local catchment residents about their restoration priorities to guide planning and research by getting a better understanding of the local context [69]. This has not been without its challenges: disparate literacy levels, and language and cultural barriers created difficulties for ensuring participants understood the risks of their involvement, recognised their rights (particularly important in the context of historic land rights concerns in South Africa), and felt empowered by the process [69]. In these two examples, relational expertise is emerging as actors recognise the value of other actors’ perspective, knowledge and skills for expanding their understanding of the problem. Engaging catchment residents and Traditional Leaders in their home language (isiXhosa), creating space for local cultural practices in meeting spaces (e.g., praying at the start of a meeting), and taking time to get to know them outside of the formal meeting spaces, have been key enablers of the emergence of relational agency.

Integrated restoration and planning for landscape stewardship is only possible through the development of *common knowledge* as implementers, local residents, Traditional Leaders, and researchers start to understand each other’s different personal and professional motives. It also requires the facilitating researchers starting to mediate the collaborative process by transferring, translating, and transforming knowledges across differences [58]. This building of common knowledge is evidence of the Tsitsa Project starting to work explicitly according to one of its core principles, namely transdisciplinarity [31]: i.e., an openness to working with diverse knowledges to co-produce new knowledge, which includes recognising that local communities have more knowledge than outsiders (i.e., the facilitating researchers) about the catchment, and they are recognised as experts in the catchment.

Relational agency is becoming evident in the core activities of prioritising, mapping, and planning, i.e., in the integrated planning for landscape restoration. The making of maps, and the making of decisions, are ways in which actors are starting to ‘do together’, i.e., they are starting to build a collective strategy (Table 1). Applying the gardening tools to the Tsitsa River catchment case has shown that more time needs to be allocated in the early stages of such an initiative for actors to listen to each other, for facilitators to get to know the situation and the actors and their perspectives, i.e., to build relational expertise and common knowledge as a foundation for relational agency.

5. Discussion: Cross-Cutting Insights and a New Perspective for Multi-Actor Collaboration in Landscape Stewardship Initiatives

5.1. Cross-Cutting Insights on Relationality: What the Gardening Tools Reveal about Boundary-Crossing Work for Landscape Stewardship

From our analysis of these two cases of landscape stewardship, we have learnt that history and context influence relational processes significantly; that due to these influences (and also others) the

boundary-crossing work is difficult; and that focusing on working in smaller, focused pockets within a large-scale landscape initiative is helpful. Below we further unpack these three insights.

1. History and context matter. Both our cases have highlighted the importance of understanding the influence of history in creating deep differences and shaping relations among landscape actors. The various differences among actors identified in our cases (e.g., race/ethnicity, language, knowledge system) strongly influence knowledge and power asymmetries between actors. We found that the long history of discrimination in South Africa has caused lasting fragmentation of social groups and power imbalances. In the Langkloof case, Living Lands paid careful attention to power and other differences in constituting the working group, e.g., including farm workers, which took some actors by surprise. In the Tsitsa case, attention to local language and cultural practices was seen as critical to slowly and respectfully build relational expertise among actors. In Australia, Duhn et al. [58] also noted the difficulties in boundary-crossing work in post-colonial contexts where difference and diversity are often sharply in focus. They recommend the active building of a sense of belonging as a 'red thread' in the process of generating relational agency, and we come back to this below in the social-relational practices we recommend to support multi-actor collaboration.
2. Boundary-crossing work is difficult. Applying the gardening tools in the analysis of our cases has confirmed what we already know about boundary-crossing work for landscape stewardship [17,31]: it is difficult work, and the difficulties are exacerbated by inequalities and power dynamics. Of course, the challenges of boundary-spanning work are also widely acknowledged in landscape and social ecological research [7,28], and in the organizational and educational research from which we have drawn the gardening tools [56,58,71]. However, applying these tools has helpfully revealed where some of the particular challenges lie in landscape stewardship initiatives (e.g., how the deep social divides slow down the development of relational agency, and how building common knowledge is difficult when some forms of knowledge are seen by some actors as superior to other forms). We find that through this analysis, we can appreciate the many boundaries that are formed or that exist in these multi-actor collaborations, which we may not have seen so clearly without the tools.
3. Focused pockets of relational work are helpful. Relational expertise, common knowledge and relational agency can develop within pockets and in an uneven or patchy way within a group or landscape (see also Cockburn et al. [17]); i.e., they often develop more easily among more similar actors as a starting point, or among actors with a clearly shared interest (e.g., honeybush cultivation in the Langkloof, and landscape planning in the Tsitsa). These pockets need to enable frequent interaction and small scale collective actions among actors, which can help to build common knowledge and eventually relational agency [72].

However, even within these pockets, explicit recognition and careful mediation and facilitation of traditionally marginalised voices and knowledge holders is necessary to strongly build relational agency and common knowledge. This takes time and skillful facilitation, to enable actors to work around expanding their shared understanding of an object of activity to build common knowledge [56] (e.g., around honeybush cultivation in the Langkloof, and around participatory mapping and integrated planning in the Tsitsa). We find then, as also discussed by others, that careful design, management, and facilitation of boundary spaces is crucial. However we also ask ourselves, how enduring the role of facilitating organisations (such as Living Lands and Rhodes University) should or could be in landscape stewardship initiatives? Should the level of facilitation and mediation perhaps change over time?

In both our cases, smaller pockets of multi-actor collaboration have shown how the building of common knowledge can mediate the development of relational agency. However, without respectful acknowledgement of differences among actors, i.e., where actors are willing to 'see' the other and what they can offer in a process of relational expertise, the common knowledge cannot be built. For example,

in the Langkloof case, through careful constitution and facilitation of the working group, the knowledge of the farm workers was brought to the fore. This has shown that they have something to offer, which has brought them closer to crossing the boundaries created by historical differences between them and the farmers and consultants. Bringing them in has also enabled the different actors to get to know each other in a professional space, which is an important enabler of collaboration [58].

5.2. Towards New Perspectives for Multi-Actor Collaboration: A Relational Approach Suggests Three Social-Relational Practices

The literature on collaboration for stewardship and natural resource management historically has a strong focus on the practices of designing and building institutions to enable collaboration among actors [9,38]. There are however growing calls for a more relational understanding of the social processes and ties involved in multi-actor collaboration [9,48,53], or the ‘stuff’ of relational ties as Lejano [24] calls it. Here, we respond to these calls and offer a new perspective on multi-actor collaboration based on a relational approach.

In light of our findings, and drawing on the literature on relationality, we propose three social-relational practices which could support more effective and meaningful multi-actor collaboration. They are as follows:

1. **Belonging while differing.** This practice speaks to the contextual challenges we identified above, which relate to differences between stakeholders which are exacerbated by inequalities and power dynamics. Collaboration for landscape stewardship requires people to build a shared sense of identity and belonging, in spite of these differences. In arguing for this practice, we agree with Duhn et al.’s [58] assertion that a sense of belonging should be the foundation of building relational agency, and with Lejano’s [24] description of identity as a relational notion of ‘who I am in relation to others’, i.e., the interdependence of actors [73]. Actors engaged in boundary-crossing work for landscape stewardship come into such processes with their own identities [30], from different backgrounds, and a key practice should be to build a shared sense of belonging, while acknowledging differences. While Edwards acknowledges difference between actors in her work, she says it is often small [56]. In our cases, we have seen inter-actor differences to be large and difficult to overcome. Rather than seeking to overcome the differences, it is important for actors to be able to feel a sense of belonging, despite their differences, particularly in post-colonial societies where difference has often led to marginalization [17,58]. Recognising relational expertise and building common knowledge can be a powerful way of developing this shared identity and understanding of the collaborative work.
2. **Growing together by interacting regularly and building common knowledge.** Based on the experiences in our cases, we have identified the importance of working in small pockets to do relational work. The practice we recommend here speaks to how one might do that work. Actors collaborating for landscape stewardship need to spend time together to get to know each other, to expand their understanding of the object of activity and to learn to act together, i.e., to develop relational agency, and out of that, to work towards building common knowledge. As Duhn et al. put it [58], actors need to engage in a common experience or process. This requires an explicit practice of regular interactions to grow together as a group with a shared identity and understanding of the complex problem in focus. We have found that this common knowledge is most effectively built through practical actions like trialing cultivation methods in the Langkloof, and making maps in the Tsitsa. However, as pointed out by Edwards and others [56,58], these actions need to be embedded in carefully designed and managed meeting spaces for regular interactions.
3. **Learning and adapting together with humility and empathy.** This third practice can also be a guide to working relationally in focused pockets in order to realise relational agency. The difficulties in collaboration described above indicate opportunities for learning and adaptation—both at the individual and the collective level (see Cockburn et al. [31] for further discussion on learning at

sites of tension and difficulty among diverse actors). The differences between people also call for an empathetic approach in which people try to ‘walk in each other’s shoes’ despite their differences. Paying attention to the affective or emotional dimensions of social-relational processes is critical, as without it we ignore the most basic of human characteristics [24,53]. Thus, while learning-by-doing and adapting together are widely recognized as important social processes and practices in SES research [7,11], and their relevance is apparent in our cases as well, doing so with an attitude of humility and empathy for the other is less frequently recommended. In order to develop relational expertise, those actors whose knowledge is conventionally considered superior (e.g., scientists or consultants) must be able to humble themselves in light of other forms of knowledge helped by more marginalised actors (e.g., local knowledge, experiential knowledge). The necessity of a position of humility by scientists is recognized in complexity approaches to SES research [33], and should be adopted by scientists engaged in boundary-crossing spaces to enable social learning and the development of common knowledge. Finally, in order to truly ‘see the other’ as is necessary for developing relational expertise, building common knowledge, and activating relational agency, it is necessary for actors to approach one another with empathy, i.e., to imagine walking in the others’ shoes, and to seek to understand their background and perspective [58].

5.3. Policy Implications

The research insights and social-relational practices we discuss above have at least two significant implications for policy on landscape stewardship. Firstly, our findings indicate that collaboration among diverse stakeholders is a slow process which needs to be resourced effectively, and for which the relevant skills need to be built. In order to reach the ideals of landscape stewardship, i.e., to integrate research, planning, policy, and practice towards more sustainable and equitable outcomes, governments and other funders need to invest in social-relational processes and capacity building for collaboration—not only in practical and technical solutions, as is often the case, in stewardship work [16]. Secondly, context-specific landscape stewardship approaches need to be supported, rather than imposing top-down blueprints imported from elsewhere. Far too often, policy drives ‘one-size-fits-all’ solutions for landscape stewardship [4], ignoring local dynamics such as history, power relations, and social diversity, which we have shown to have such a strong influence on collaborative stewardship processes.

6. Conclusions

We began this article by proposing a relational approach to landscape stewardship, outlining what it is, why it matters, and what it means. We then applied this approach to analyse two cases of landscape stewardship, examining multi-actor collaboration for landscape stewardship using Edwards’ gardening tools [55,56]. We found the tools useful to gain a more finely-textured understanding of human-human interactions. Applying the tools has shown how important the context and history of a place and its people are in shaping the inter-personal interactions. Historic disparities and power dynamics between people make boundary-crossing work particularly difficult, and working in small pockets can help to focus boundary-crossing activities. In this, we offer an advancement of the work of the gardening tools: applying them in a new context, beyond the educational and social work contexts in which they have usually been applied, has shown that it is important to emphasise the historical aspects and the need for careful attention from stewardship facilitators towards the different dimensions of relationality in the context of boundary crossing work. We suggest that the tools could be applied in similar ways to support analysis, planning, and facilitation and gain a more nuanced understanding of collaboration in other social-ecological sustainability initiatives.

The tools have also helped to identify three key social-relational processes which lend a perspective on collaboration currently under-represented in the literature. We recommend that participants and facilitators of boundary-crossing work pay attention to these three practices as a guide to collaboration: 1. belonging while differing, 2. growing together by interacting regularly and building common

knowledge, and 3. learning and adapting together with humility and empathy. Finally, we offer these three practices as a potential research framework, inviting researchers and other practitioners to investigate the applicability of these practices in their contexts. Our hope is that such applications will deepen our understanding of human-human relationships in social-ecological and landscape stewardship research.

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