land

MDPI

Article

Learning through Place-Based Implementation of the UNESCO MAB Program in South Africa's Oldest Biosphere Reserve: A Case Study of the Kogelberg Biosphere Reserve

Michael Klaver [1,2,*], Bianca Currie [2], James George Sekonya [1,2] and Kaera Coetzer [3,4]

[1] Department of Conservation Management, George Campus, Nelson Mandela University, George 6529, South Africa; james.sekonya@mandela.ac.za
[2] Sustainability Research Unit, George Campus, Nelson Mandela University, George 6529, South Africa; curriekillick@gmail.com
[3] Department of Geography, Geoinformatics and Meteorology, University of Pretoria, Pretoria 0028, South Africa; kaera.coetzer@up.ac.za
[4] Global Change Institute, University of the Witwatersrand, Johannesburg 2000, South Africa
* Correspondence: m18klaver@gmail.com

Abstract: UNESCO's Man and the Biosphere Programme (MAB) is implemented through a world network of biosphere reserves, which offer a holistic people-centered landscape-level conservation approach. When successfully implemented the program enhances social–ecological system sustainability and resilience. However, there remains a research gap in understanding and collating lessons from individual sites for the benefit of the program globally. We assess MAB implementation in South Africa's oldest biosphere reserve, the Kogelberg Biosphere Reserve (KBR; est. 1998). Using semi-structured in-depth interviews with directors and the coordinator, complemented by document analysis, we explore the governance and implementation learnings of the KBR as it has evolved. The KBR program implementation is guided by global necessity, but driven by the local context, which for the KBR translates to a non-profit organization cooperative governance model. The site faces a perceived lack of government financial support and awareness of the 'biosphere reserve' concept. Despite these challenges, successes have emerged in the formation of local partnerships to fulfil critical roles in socio-economic development and biodiversity conservation. The learnings from KBR, as it strives to become a model site for sustainability, are useful for other sites similarly operationalizing an international designation for local conditions.

Keywords: UNESCO; Man and the Biosphere Programme; social-ecological systems; governance; sustainable development goals; biodiversity conservation; collaboration; sustainability

check for updates

Citation: Klaver, M.; Currie, B.; Sekonya, J.G.; Coetzer, K. Learning through Place-Based Implementation of the UNESCO MAB Program in South Africa's Oldest Biosphere Reserve: A Case Study of the Kogelberg Biosphere Reserve. *Land* **2024**, *13*, 455. https://doi.org/10.3390/land13040455

Academic Editor: Kenneth R. Young

Received: 28 February 2024
Revised: 25 March 2024
Accepted: 1 April 2024
Published: 2 April 2024

Copyright: © 2024 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https://creativecommons.org/licenses/by/4.0/).

1. Introduction

The Man and the Biosphere Program (MAB) supports the United Nations Sustainable Development Goals (SGDs) [1–3] and other multilateral agreements, such as the Convention on Biological Diversity targets [3] and Paris Climate Agreement [1]. Therefore, it may be one of the most promising ways of tackling the *triple challenge* of the Anthropocene, i.e., biodiversity loss, climate change and human well-being [4]. Biosphere reserves (BRs) are useful landscape management tools in this regard because they involve inclusive, flexible and multistakeholder governance arrangements that are context specific and offer an integrated and holistic approach to deal with these interlinked and cross-sectoral challenges [2,4,5]. Furthermore, they act as a global network of *learning laboratories* for sustainability science and research on climate change [3,5–7].

Governance structures adopted in BRs serve as a tool to enable stakeholder participation and to sustainably achieve their individual goals, although how they facilitate participation can differ from site to site, and even within the country [8]. Although guided

by overarching documentation, BRs must contextualize their implementation based on local circumstances, with key UNESCO MAB guiding policy, i.e., the Statutory Framework [9] and the Technical Guidelines for Biosphere Reserves [8], acknowledging prescriptive implementation documents would not work.

However, MAB requires that BR arrangements should provide for stakeholder involvement and participation in both the design and implementation of BR core functions [9]. The current MAB Strategy 2015–2025 and Lima Action Plan (LAP) 2016–2025 [1] calls for participatory planning around individual BR implementation, which is effective and equitable, and supported by local and national government and the private sector [8].

BR scholarship has identified a need for understanding the institutional context and governance strategies of BRs in the landscapes in which they operate, i.e., understanding global strategy and policy contextualization for local purposes [3,7,10,11]. Accordingly, there is a need to understand and compare lessons learnt, and to consider successes and challenges from each site to improve global MAB implementation successes [1,10]; herein opportunities for place-based learning are considered a significant MAB strength [7–9]. The absence of a governance blueprint within BRs offers an opportunity for learning and sharing experiences in what works, why, and in what context, which may aid the implementation of a global program for local fit, while fulfilling its obligation for innovation in sustainability science [7].

Ferreira et al. [12] conducted a systematic literature review of BR management effectiveness, including 66 publications between 1996 and 2017. They found most (57.6%) first authors were from the Global North (Europe and North America—none from Africa), of which none conducted research on their own BRs, and only 6% of papers were single in-depth case studies on BR management or governance. Most of the research on management or governance in BRs was project based—not on the BR itself, and only one study included a BR in its entirety. The review's outcome was that there is a need for greater geographic diversity of research, for more research on BRs as single case studies, and it also produced the finding, like Barraclough et al. [7], that BRs remain underutilized, in terms of their contributions to the theory and practice of sustainability science. Importantly, research on BR governance, i.e., MAB implementation, remains a gap in the literature.

To address the shortfall in geographic diversity, especially for Africa, and BR-specific case studies, as opposed to project-based studies, scholars in South Africa are currently pioneering research on South African BRs (more can be found here https://researchbiosphere.org, accessed on 29 March 2024). This project is compiling in-depth case studies to unpack various aspects of BR governance to offer lessons to newer BRs, share experiences across the WNBR, and potentially contribute to improved MAB implementation success.

In this respect, the Kogelberg Biosphere Reserve (KBR) [13] makes for an interesting in-depth case study of institutional context and governance strategy. It was established as a bottom-up response to a proposal for the construction of a dam and is the oldest BR in South Africa (est. 1998), emerging soon after South Africa signed a country agreement with UNESCO–MAB. Since its establishment, it has passed through multiple generations of UNESCO policy guidelines, evolving and adapting to stay in line with these policy amendments. Furthermore, the KBR holds multiple designations, being located in the heart of the Cape Floristic Region (CFR) World Heritage Site, which presents a complex social–ecological context [14,15]. Hereafter, we explore the interpretation and implementation of the MAB in the context of the KBR, focusing on the translation of the international MAB designation for a local social–ecological and economic fit. We explore the strategic decisions and motivations therein that have enabled this BR to fulfil the role it has envisioned within its broader landscape.

2. Materials and Methods

2.1. Study Area

The KBR spans 103,629 ha (Figure 1), including 24,629 ha of marine area [13–15]. The KBR is considered one of the most ecologically diverse biodiversity hotspots world-

wide [14,15]. Furthermore, the site has economic significance—being *"one of the most important deciduous fruit producing and exporting areas of South Africa"* [16].

The core area constitutes 31%, covering 31,629 ha (30,000 ha terrestrial and 1629 ha marine environments) and is made up of formally protected areas (PAs), in the form of Provincial Nature Reserves, which are category 1A according to the International Union for Conservation of Nature (IUCN), and under the management of CapeNature, the provincial conservation authority of the Western Cape province, South Africa. The core zone prioritizes nature conservation and long-term protection [8,17]. The buffer zone constitutes 39% of its overall area, stretching 40,000 ha (17,000 ha terrestrial and 23,000 ha marine environments), emphasizing scientific research, and monitoring and education with limited human use, which is compatible with conservation objectives [8,17]. The transition zone constitutes 32,000 ha, roughly 30% of the BR footprint, and is where human populations intend to practice sustainable resource management and development [8,17].

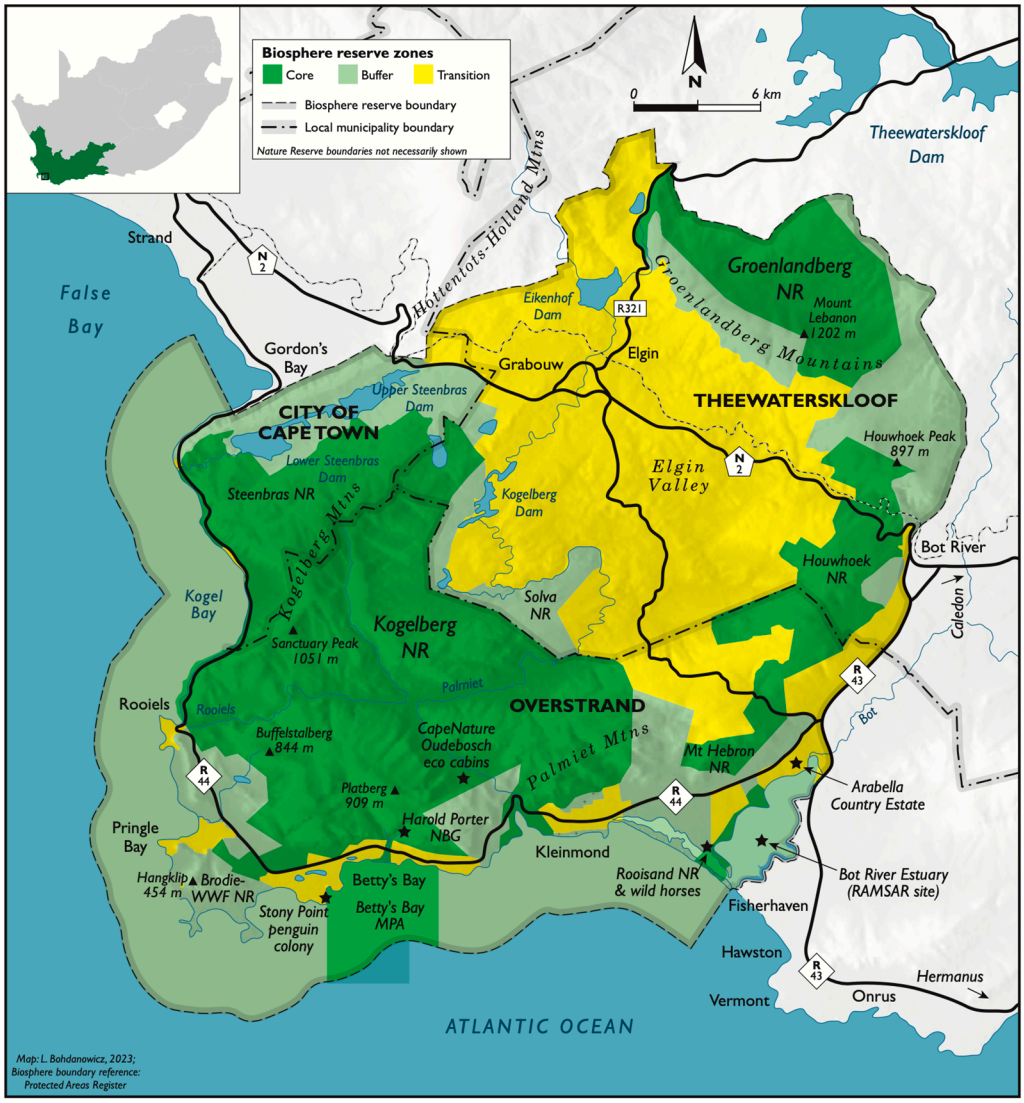

Figure 1. Map of the Kogelberg Biosphere Reserve, illustrating the core (31%, 31,629 ha), buffer (39%, 40,000 ha) and transition (30%, 32,000 ha) zones, important points of interest, and major towns and transport routes [18].

The site is home to approximately 60,000 permanent residents, with an additional 50,000 non-permanent residents during peak times, i.e., holiday periods and weekends [14,15].

Kleinmond and Grabouw are the major towns of the region. The primary economic activities across the BR include agriculture, specifically deciduous fruit and wine in the Elgin Valley, flower production, commercial forestry plantations (*Pinus* species), as well as tourism, specifically eco-tourism, throughout the BR [14,15].

The latest national census (2011) data from the six largest municipalities in the transition zones: Rooiels (n = 125), Pringle Bay (n = 801), Betty's Bay (n = 1380), and Kleinmond (n = 6634) of the Overstrand Municipality, and Grabouw (n = 30,337) and Elgin (n = 953) from the Theewaterskloof Municipality (Figure 1), shows a population of 40,230 [19], characterized as follows:

- Population groups present within the KBR are mostly colored [1] (49.12%), thereafter black African (35.78%), white (13.91%), other (0.98%) and Indian/Asian (0.21%). Most of the population speak Afrikaans (61.79%), followed by isiXhosa (25.82%) and English (5.56%), which are the three official provincial languages predominantly spoken in the Western Cape, South Africa.
- Sex and age distribution: Males and females are evenly distributed across age groups. The average age of the population is in the 25–29 age category. Most of the population (51.54%) is under 30 years old—a young population—and 57.73% of the population are in the working age category (20–64).
- Education: A large portion of the population have some secondary schooling (41.56%), and 22.96% have matric. 9.8% of the population have a higher education.
- Most (51.33%) of the population's average household income is between R9 601/$1212.25 and R76 400/$9646.46 (ZAR exchanged at R7.92/ US$1 during the 2011 census), being however skewed towards the lower end; meanwhile, a significant portion of the population (16.65%) has no income at all—indicating inequality.
- Most of the population have electricity for lighting (87.97%) and a flush toilet (89.75%), whether connected to sewerage or septic tank, while less (66.95%) have piped water inside their dwelling.

The Kogelberg is considered the heart of the CFR and is the smallest, most relatively diverse floral kingdom in the world—one of the world's *hottest hotspots* in terms of its diversity of threatened and endemic species [15,20,21]. Approximately 1600 plant species occur in the subregion, of which there are an estimated 150 taxa that are endemic to the area [15] The predominant biome is Fynbos (dominated by Proteaceae, Ericaceae, Restionaceae and Bruniaceae)—a sclerophyllous vegetation type adapted to long periods of dryness and heat, winter rainfall, regular fires, and low soil nutrients [21], which experiences a Mediterranean climate characterized by dry hot summers and cool wet winters.

The marine portion of the BR forms part of the southern Atlantic, which is subject to upwelling events, in which nutrients are brought to the surface—driving a highly productive and diverse marine environment [14,15].

2.2. Methods and Data

This case study was compiled using an inductive qualitative approach, drawing on in-depth and in-person semi-structured interviews with individuals of the Kogelberg Biosphere Reserve Company (KBRC; ethics certificate: H22-SCI-NRM-001). These data were supplemented through document analysis. The aim of this case study is to provide a contextual understanding by exploring the implementation of MAB in local conditions, and not to produce generalizable findings to be inferred elsewhere—rather, the aim is for lessons and experiences to be shared across the World Network of BRs (WNBR).

Purposefully sampled participants (n = 9) for interviewing were the Board of Directors (BofD) and coordinator. Criterion for participants were that they must be personnel of the KBRC. The interview protocol consisted of the following categories:

i. Governance model: How it was initially formed, enables a specific governance approach, i.e., how decision-making processes occur, and how it has evolved over the years. Participants were asked to describe the governance approach applied, their

perceptions and motivations behind using this approach, and what challenges they have encountered.

ii. History of involvement: Finding sources of participants' personal commitment to the BR and their initial and continued motivations for continued involvement in the BR.

iii. Envisioned role: Perceived vision for the BR and its role in the social–ecological system (SES).

iv. Stakeholders: How the current BR governance model allows, enables/prevents, other stakeholders from participating in the BR, and how participation is constructed by the BR.

v. Critical relationships: Exploring the institutional overlap and vertical and horizontal alignment with actors operating in the landscape.

The duration of the interviews ranged from 45 to 110 min. Not all questions were appropriate for all participants, explaining variable interview times.

Document analysis involved the use of, self-sought and provided, electronic sources, archival, policy, and other guiding documents. Sources used included the website of the KBR [13], a SES model description of the KBR, a project and program plan, a historical timeline, and a strategic management framework/plan.

The interview data were transcribed using Otter.ai [22], validated to address any misrepresentations, and thematically coded using ATLAS.ti [23]. The data were analyzed through an inductive 6-step thematic analysis utilizing the methods of Braun and Clarke [24].

To maintain anonymity, each respondent or document was allocated a reference code, for example *IR5* (interview respondent 5) or *DR2* (document result 2). Throughout the results, frequency (*f*) counts refer to the number of participants mentioning a particular theme (rather than the number of times a theme was mentioned within the interview collective), to get a sense of prioritization or importance of a particular topic. Frequency counts were not for quantitative analysis purposes, and were only used to indicate levels of significance.

Attempts have been made to keep verbatim quotes; however, some scenarios required minor alterations to enhance the '*readability*' of the data presented, for example, repetition, hesitations, stumbling speech, or translations [25]. Where specific information in the quotation may identify the respondent/s, redactions have been made in the form of [XXX]. Throughout the paper, quotations have been used in-text or provided in quotation tables. The challenge was to find balance between keeping as much detail as possible without creating too much material to read [25]. Furthermore, verbatim quoting and triangulating quotations from respondents helped develop the credibility of the data [25].

3. Results

3.1. Governance Model: Initial Establishment and Evolution

The impetus for the formation of the KBR came from an environmental threat. IR,4 explained that the government had proposals to dam the Palmiet River, which would flood the Kogelberg Valley to provide the City of Cape Town (CoCT) with water. The local community along the coastal villages strongly objected and proposed the establishment of a BR, a concept thought to be a strategy to deal with the threat at the time (IR2; DR3). The KBR, officially declared in 1998, *"was the first one* [BR] *declared in South Africa and it was declared purely from a conservation point of view"* (IR1; DR4). The Kogelberg Biosphere Association (KOBIO), previously known as the Hangklip Regional Forum in 1991 (DR3) and Greater Kogelberg–Hangklip Regional Forum in 1992 (DR3), lobbied for a BR and submitted the application to UNESCO in 1994 (DR3), and were responsible for the public participation component of managing the BR (DR3). KOBIO was described as *"an organization of scientists and nature lovers, mostly around the coast"* (IR2), and referred to as '*environmental activists*' (IR2). KOBIO had been influential in the area, however, their *"focus is to exclude, stop development, . . . just preserve. . ."* (IR1)—a vision adopted initially by some stakeholders at the time (IR2). The KBRC, a non-profit company in accordance with Section 21 of the

Companies Act 61 of 1973 of South Africa, was established in 2002 to manage the KBR in terms of the MAB requirements and to achieve the vision of *"the Cape Floral Kingdom's model sustainable living environment for all"* (DR4). From 1998 to 2002 this was the role of an elected Management Committee—a '*large and clumsy*' committee, which necessitated the formation of the KBRC (DR3). Until 2004, when the technical committee was established to support the KBRC, the KBR struggled to become operational and was near collapse (DR3; DR4).

The BR evolved over the years, from being a predominantly top-down to a bottom-up implementer, after realizing their ineffectiveness and diversifying their activities, due to the need for socio-economic development in combination with conservation (IR1). Their initial approach was to directly engage with mayors, explaining to them that they are in a BR and should attend the meetings, however this achieved minimal success (IR1). More recently however, the BR directly engages, through projects, with the more '*local people*' within the municipalities, i.e., public officials working on the ground, which has increased success (IR1). Increasing their focus on socio-economic activities was spurred by participants perceiving that *"you can't expect a hungry person to protect the environment"* (IR1) and that there are many people who are dealing with multiple challenges, i.e., poverty, hunger and economic crisis, and so environmental care is not necessarily their immediate priority (IR5).

The move towards a more bottom-up implementation brought challenges or similar _____. The BR is *"trying to get this more bottom-up. . . . you just got to find people from the bottom and bring them in. Then of course they never pitch up at the meetings. They didn't have the resources to even contribute"* (IR2). Participants believe the BR first needs to get to a position where it can provide value—a participant stated: *"I first want us to get to a point where* [*the KBRC*] *can be of some use to them. At least give them a lift to the meeting"* (IR2).

3.2. Governance Model: Structure, Responsibilities and Decision-Making

A visual representation of the governing structure for the KBR can be seen in Figure 2. Directing the KBR is the BofD and coordinator, who also oversee the day-to-day activities and running of the BR. This management entity makes up the KBRC. Supporting the KBRC are two advisory and support groups, the technical committee, and the professional advisory group (PAG). These two stakeholder groups, along with the KBRC, interact with all other interested and affected parties present within the KBR.

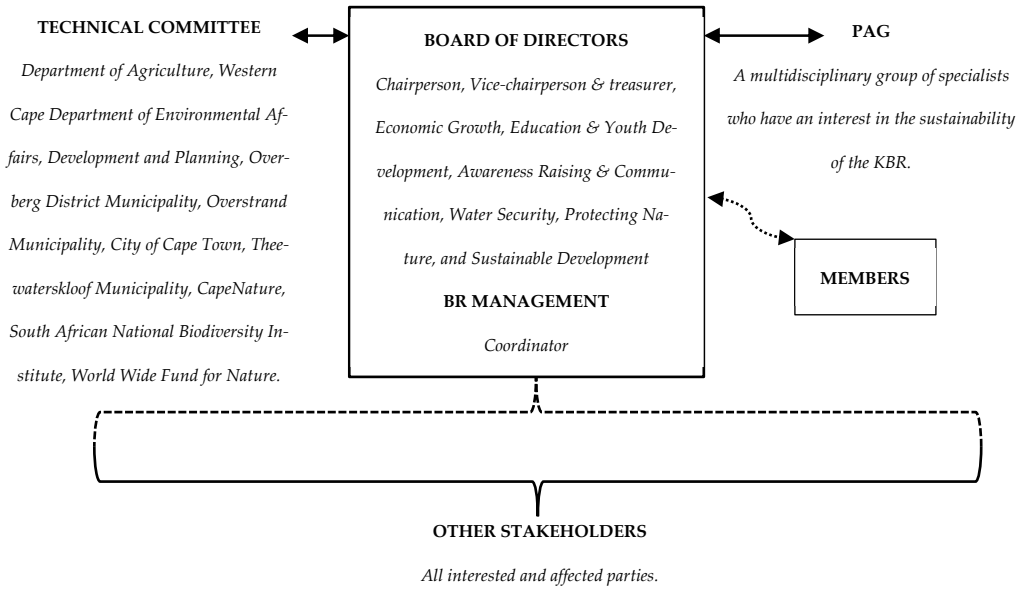

Figure 2. Schematic diagram of the Kogelberg Biosphere Reserve Company, including its technical committee, professional advisory group, registered members and other stakeholders.

The board consists of nine directors (three female, six male), including a chairperson, vice-chairperson and treasurer, and several portfolios (Figure 2) (DR5). Each of the directors are assigned to one of the portfolios, also referred to as a '*program*' (DR2), depending on their expertise. Within each program are several projects and it is the responsibility of the director to provide support through their experience and knowledge (IR1). One of the directors is the chairperson of the PAG—providing a direct link between the two bodies (IR1). BR management consists of a full-time coordinator who is responsible for managing the day-to-day activities, i.e., finance, administration and running the projects (IR1).

Directors either approached the KBRC or were sourced to serve on the board in a volunteer capacity. One director approached the KBRC to join the board (IR3) and another has been on the board since initially serving on the board of KOBIO (IR2). IR,1 stated that directors serve a term of three years and can be re-elected for a second term not exceeding six years. This is to ensure institutional knowledge is retained—older directors can mentor and train newer members, and newer members join intermittently to bring in new ideas, knowledge and experience (IR1). Three directors joined in 2023, whereas others have been serving two to five years, with the chairperson serving the lengthiest term after becoming a board member in 2016.

The directors steer the focus of the KBR. When asked about the evolution of their focus, one participant stated: *"it depends a lot on your directors and their focus. In the past, the focus of the directors was very much conservation"* (IR1). IR,7 said that a '*shake-up*' occurred in recent years—with greater interest in socio-economic and human development. IR,1 believes that there has been what is referred to as a '*mental shift*'—a shift from focusing purely on conservation and stopping developments, to a focus on creating sustainable solutions and working on developing human well-being.

When the KBRC plan their annual operations, they find alignment between the programs and projects they implement to meet the needs of their immediate local context and the '*bigger picture*' (global) targets of the SDGs—where the KBRC attempt to find alignment with the UNESCO–MAB policy guidelines (IR1). A focus on the SDGs, as opposed to UNESCO policy guidelines, is because of their overwhelming length, which leaves the BR believing they are not achieving much (IR1).

The KBRC had a part-time coordinator since 2020, which had been outsourced (IR1), and worked 10 days per month, however, as of 2023 the coordinator joined full-time, working 40 h per week. The coordinator is offered training opportunities, for example attending fundraising and communication workshops. Their social media management has been outsourced (IR1; DR2). Other additional permanent positions that the KBRC needs, given its recent and expected growth, include a secretary, fundraiser, administrator, CEO, and someone doing outreach and communications (IR1; IR2; IR6).

KBRC members are sourced based on their personal (f = 7) interest and skills, knowledge (f = 6) which they hold, and networks and connections (f = 6) that they have (Table 1). The criteria sought after in a director are passion, leadership, vision, community ties, and the fact that they reside within the BR (IR1; IR2).

Table 1. Descriptions of beneficial skills within the Kogelberg Biosphere Reserve Company helping to fulfil the envisioned role of the biosphere reserve.

Skill	Skill Description
Personal	Being *influential* (IR2) or *patient* (IR1), having *people skills* (IR4)—being able to *build relationships* (IR6), being a *hard worker* (IR5) or a *visionary* (IR7), or being able to *bring communities* together (IR5).
Knowledge	*Ecological*, *economics* and *business*—especially the interface between *economics and the environment* (IR3), *tourism* (IR7), *law* (IR8) and knowing *how government and public offices function* (IR8), *administration*, *community engagement* and workshop *facilitation* (IR6), and being aware of *current social, economic, environment and political affairs* (IR5).
Networks & connections	Connected with people in the KBR or having built up networks after spending decades working in the field of conservation (IR1; IR2; IR5; IR8; IR9)

Board meetings, which are held every second month, provide a place to plan, discuss and vote on decisions (IR6). Meeting agendas are shared beforehand so further items can be attached (IR5). Decisions are believed to be made quickly and easily (IR1). There is a concern that decisions are made too quickly, which does not allow for fully informed decisions. IR6 stated: "[Board meetings] *almost go too quickly. I sometimes think the decisions are just made on the spot, there and then, because we haven't got much time…*".

There are a wide range of motivations for joining and continuing to serve the BR (Table 2). These include their passion, enjoyment, love for/interest in the environment and BRs (f = 7), recognizing the lack of government capacity and needing an organization to be a change agent (f = 5), conservation issues (f = 3), the holistic and inclusive approach of BRs (f = 3), believing that there are good people doing good work (f = 2) in their local environment, sustainability, youth, and future generations (f = 2), and the immense potential and opportunities the environment offers (f = 2).

Table 2. Motivations for personnel joining and continuing to serve on the KBRC.

Theme	Theme Description	Example Quotes
Passion, enjoyment, love for/interest in the environment and BRs	Personal interests motivating participants to serve on the KBRC	*"I'm passionate about this area, I love this area. I love everything about it"* (IR2). *"Just love for our environment"* (IR8). *"I'm a conservationist. I was interested to see how this BR worked"* (IR9).
Recognizing the lack of government capacity and needing an organization to be a change agent	Realizing capacity issues and participants wanting to create change	*"I realized that there is no way that conservation can just be done by government entities. A lot of the focus of the government like CapeNature and SANParks is more exclusion, what you cannot do, and allowed to do. We are way beyond that point where we can say to people who can't do this, we must find a way to do it, but in a sustainable manner… I think a biosphere* [reserve] *is the perfect vehicle to be doing that. Because the biosphere* [reserve] *does not only focus on conservation, it's job creation, it's education…"* (IR1). *"It's impossible to change anything on your own. You've got to be part of an organization… There are so many … little organizations or little groups trying to do their thing. They're not always working or pulling together. I think the biosphere* [reserve] *forms sort of the umbrella organization who can get everyone involved. That's why I'm choosing to be a part of them"* (IR6). *"The only real impact that can be made is through an umbrella* [organization] *like KBRC"* (IR8).
Conservation issues	Realizing conservation issues and wanting to find solutions	*"I love the place. But then I realized there's lots of conservation problems. I thought, okay, how to get involved…"* (IR6). *"I am seeing glimpses of development that's not sustainable."* (IR8).
Holistic and inclusive approach of BRs (social, economic and environment)	Attraction to the people-centered approach to landscape conservation	*"One needs to have activities that will put food on the table before one even talks about conservation"* (IR7). *"Lifting the local community that hasn't really benefited from the resources the way they should have. It's been agriculture and forestry. Then the local community has just been* [farm] *workers, everyone's a* [farm] *worker except for the 100-odd farmers…"* (IR2).
Good people doing good work	Motivated by the people and the good work they do	*"What motivates me is that I see a lot of good people doing the right thing and understanding what we've got here. … it's under so much threat, but it is one of the most important floral kingdoms on the planet. We don't want to lose it"* (IR7).
Sustainability, youth, and future generations	Motivated by the youth and sustainability for future generations	*"I want young people to feel like there's more to life than what they're currently experiencing. I do the stuff that I do with the agenda of introducing them to, 'guys there's so much more than what you see right now. This doesn't have to be the end'"* (IR5). *"For the long run and for future generations"* (IR8).
Immense potential and opportunities the environment offers	Acknowledging the potential of the landscape	*"I see the immense potential in the natural resources of* [KBR]*"* (IR2)

The technical committee, which formed in 2004 (DR3), provides support and convenes their critical partners, including authorities and some conservation bodies (DR2; DR4). It is *"an attempt to get people from these various silos to actually sit in a room together"* (IR4). Additionally, the newly formed PAG, also known as the '*KBR Science Affiliation*' (DR1), was initiated by interested and affected parties interested in the sustainability of the KBR (IR4). The PAG is a diverse group of '*scientists and technical specialists*' who self-organized to bring a scientific approach to prioritizing and addressing challenges, thereby supporting the activities of BR (IR4; IR9; DR1; DR2). The PAG conducted an analysis on the KBR to develop a SES model description and identified what they call '*pressure points*' (IR9; DR1). They presented these results at a workshop—thereafter solidifying their role. The BR orientates their programs and projects to deal with these pressure points. IR6 explained that the BR is lucky to have a supportive group of experts who the BR can seek guidance from.

Stakeholder meetings take two forms in the KBR: meetings of the technical and advisory stakeholders, as represented through the technical committee and PAG, and larger, more inclusive, meetings of all interested and affected parties residing within the KBR. Stakeholder meetings with the technical committee occur directly after board meetings (IR6). This is where the KBRC attempt to broaden the conversation with some of their critical partners (IR1). In these meetings *"*[the KBRC] *would then discuss projects and how we can collaborate, issues that have come up, . . ., find solutions and things like that"* (IR1). These meetings offer a space for information, or knowledge-sharing, and for the various stakeholders to provide feedback on their activities. Twice a year the KBRC will have larger stakeholder meetings that are open to all interested and affected parties who would like to participate (IR1)—one being the annual general meeting (AGM).

The BR has volunteers and memberships. The directors are volunteers and there is a group of wildlife rescuers (IR1; IR5). In the last two years the BR has grown to 25 paid memberships. Membership fees range from R250/$13.11 to R1000/$52.44 (ZAR exchanged at R19.07/US$1 during the time of data collection—May 2023), depending on the nature of their membership (business or individual), and the funds contributed to the BR's operational capacity (IR1; DR5). Benefits for registered members include, special access to resources such as information and maps only available to members, the use of the KBR logo, a certificate showing commitment to sustainable development, the opportunity to work with the KBR to network with key stakeholders (e.g., municipalities and local government), the power of the collective voice to bring about positive change, knowing about the project implementation and how to get involved, and access to joint marketing opportunities (DR5).

3.3. Governance Model: Evolution and Lessons Learned

The governance structure has not changed since its establishment, apart from the inclusion of additional roles—now having a designated treasurer and having diversified the board with younger members and connected it to different networks (IR2; IR4; IR8). There is momentum towards establishing a youth board (IR5). One significant change however has been the removal of incentives (IR2). In early years staff were incentivized to attend meetings (IR2), and there is a perception that previous board members lacked interest and enthusiasm, regarding their role as '*just a job*'—attracting the 'wrong' people (IR2). Previously, *"directors were just people living here, who would attend meetings, somewhat reluctantly, some of them because. . . I think they could see possibly ways and means of using the facility to gain something out of it. But I didn't get the feeling that the directors were there really to make the ultimate difference of creating jobs and addressing poverty"* (IR2). Furthermore, *"it's important that the board is unpaid, in a situation like this, because it's going to become a club otherwise"* (IR2). Strategically selecting members for the board has helped increase success (IR2; IR5). Rotating the board with the terms of service has also contributed to getting the right mix of people that have a genuine interest in the KBR and its purpose (IR2; IR8), which is reported to have increased their success (IR1; IR6; IR8).

3.4. Envisioned Role: Visions of Success

Four themes emerged when asked about the vision for success in the BR (Table 3). These include being an organization connecting stakeholders (f = 6) to link all the actors in the landscape (IR5; IR6), be their '*go-to*' (IR7) and a place where everyone talks to each other (IR8). Secondly, creating awareness, pride, and a sense of place (f = 5) so that people are aware of the KBR (and BR concept) and proud to live in and promote it (IR5; IR6). Thirdly, job creation and socio-economic opportunities (f = 4) to empower youth, encouraging their involvement in the landscape (IR2). An avenue for job creation that was identified is tourism (IR7). Finally, fostering stewardship and being a model site for sustainability (f = 4), to set an example for others through living and developing in harmony with nature (IR3; IR9), and to have residents care for the land (IR3; IR8). All the above should result in what a participant referred to as a '*critical mass*', after which success would come (IR9).

Table 3. Kogelberg Biosphere Reserve Company's visions of success for the Kogelberg Biosphere Reserve.

Theme	Theme Description	Example Quotes
Organization connecting stakeholders	The KBR seen to perform as a central hub for stakeholders to connect	*"I think it would be being a link between all the institutions and organizations in the area"* (IR5). *"The KBRC can become strong enough that they'd be the go-to for everyone"* (IR7). *"A place where the authorities and the people work together, who speak to each other…"* (IR8). *"To actually be this umbrella body where all the other conservation organizations, all these tiny groups, must sort of get it get pulled in and be part of it"* (IR6).
Awareness, pride, and sense of place	Increasing awareness and pride	*"The BR having a prominent role in the community, where everyone that stays here knows what it is, knows what it stands for, and they're proud to have it here… People being aware that 'I stay in a BR. This is what it means to stay in a BR', and to see the benefits of staying in one"* (IR5). *"A critical mass of the people living in the KBR buying into the concept and understanding what it means… I get the feeling that there's quite a large proportion of people that buy in, but not enough. Then there's a large proportion of the people that don't quite understand what it's about… If you could somehow get more people to buy in and more people to understand… the success would come"* (IR9).
Job creation and socio-economic opportunities	Creation of opportunities and employment	*"Empowering the younger people… Job opportunities, there needs to be job opportunities. If we can get a very clear… picture of the place—something turning around. The youth getting enthusiastic about getting involved in the whole landscape"* (IR2). *"This would be a major tourism destination. Because it should be… the most diverse flower kingdom on the planet"* (IR7).
Fostering stewardship and being a model site for sustainability	To be an example site for other areas to learn from, including people coexisting with nature	*"To be an example of how to live, an appropriate balance, or harmony with the environment and economy. To roll that out into places where it is not a BR"* (IR3). *"It's meant to be a model for showing other areas how they can coexist with nature"* (IR9). *"… getting everyone in, as custodians"* (IR8). *"Rentmeesters* [stewards]*"* (IR3).

3.5. Envisioned Role: Present Role in the Landscape

This section details the KBR's present role within the SES (Appendix A). Collaboration and coordination are about bringing actors in the landscape together and implementing the '*big ideas*' through custodianship (IR8). Addressing inequality and unemployment and supporting non-profit organisations (NPOs) and the youth are their main socio-economic activities. Conservation activities include invasive alien plant (IAP) clearing, wildlife and plant rescue, and supporting conservancies.

Collaboration and coordination: Three municipalities; the Overstrand, Theewaterskloof and the CoCT, as well as the Overberg District Municipality (ODM), are all actors within the BR. Additionally, CapeNature, the statutory conservation body of the Western Cape. Moreover, there are civil society bodies acting across the landscape, for example

conservancies. They see their responsibility as *"being there to bring those* [actors] *together in as an effective a way as possible"* (IR4). Their primary role is not necessarily to implement projects but rather, "[the KBRC] *can get the funding*, [the KBRC] *can get it going, but then someone has to take ownership or champion the project and I think this is where the smaller groups come in"* (IR6). The BR can also give the smaller groups and organizations a '*louder voice*' by utilizing their networks and relationships built with the authorities.

Conservation and socio-economic development: The BR sees itself as a *vehicle "to introduce and to create jobs"* (IR7), which is perceived to be important because of the belief that *"when people are hungry, you can tell them don't pollute, but that's not their main concern"* (IR5). They have partnered with other actors to fulfil their role in socio-economic development and create opportunities for those living in the BR. Their conservation role is supporting and facilitating existing conservation organization activities, and in some cases initiating new ones.

3.6. Envisioned Role: Challenges

Six themes regarding challenges for the BR to fulfil its role in the landscape emerged. Awareness, 'buy-in', communities and 'biosphere living' (f = 8) (Table 4) are associated with the lack of awareness of the BR concept and having the *'buy-in'* and support for the KBR (IR3; IR4; IR8), community members not embodying what has been referred to as *'biosphere living'* (IR8), a detachment from the natural environment (IR4; IR5; IR9), and anti-BR stakeholders (IR2).

Table 4. Awareness, '*buy-in*', communities and '*biosphere living*' as a challenge for the Kogelberg Biosphere Reserve Company in fulfilling their envisioned role in the Kogelberg Biosphere Reserve.

Theme	Theme Description	Example Quotes
Awareness, '*buy-in*', communities, and '*biosphere living*'	Challenges relating to residents who lack awareness of the KBR and BRs in general, embodying the harmonious lifestyle between humans and nature.	*"The biggest challenge is probably that I doubt that people have got buy-in really"* (IR3). *"People still don't know what a BR is. They don't know the purpose of a BR. They don't know where they're living. So, they're not doing things in line with biosphere living"* (IR8). *"I noticed that there was a fair amount of anti-BR, especially from people in the economy, the farming sector. The KBRC was too closely related to what was known as 'KOBIO' before…"* (IR2).

Funding, resources, and international partnerships (f = 7) relates to a lack of funding, and there is a belief that the KBRC '*could do a lot more*' if there was more funding available (IR9)—specifically, operational funding (IR4). IR4 stated: "[The KBRC] *can get funding for very specific, clearly defined projects. But to get funding for … giving more capacity to KBRC's office and admin and publicity… That is proving a real problem"* (IR4). The KBRC have limited human resources (IR6), which is related to the challenge of funding (IR5). Additionally, the KBR lack international partners and would like to build a relationship with those who would be willing to contribute to their cause (IR2).

Cooperation and coordination (f = 5) are a challenge that relates to what seems to be '*territorialism*' over who the management entity of the KBR is (IR4; IR8), and dividedness amongst civil society organizations, despite having the similar motivations to conserve the natural environment and its wildlife (See 'lack of consensus' in Table 10). The experience of territorialism is presented below:

> *"Every group thinks they are the ones who are managing this biosphere reserve. The other ones are somehow part of the problem. Now I'm saying this to illustrate the point that they have a tremendous sense of ownership of the biosphere reserve, but don't see the KBRC as the body that can help to coordinate all the activities. There's a breakdown there. KBRC is regarded either as, 'are you going to come and tell us [civil society organizations] what to do?' Or 'who are [KBRC], what did [KBRC] ever do for us? [KBRC is] useless'.*

Without knowing anything about what the KBRC is attempting to accomplish. . . . they'll own the land but not the body" (IR4).

Additionally, actors operating in '*silos*' is believed to be one of the KBR's '*biggest challenge*[s]' (IR1)—not communicating with each other despite trying to achieve a common goal. For example, IR9 stated: *"There's . . . 10 or more different organizations, clearing invasive alien plants and not talking to each other. . ."*.

Environmental (f = 5) challenges (Table 5) include wildfires and their associated impacts (IR1)—specifically the municipality's response to implementing fire protection (IR2; IR9). IAPs are a threat to the environment within the BR (IR9), which is exacerbated by the municipality's fire prevention strategy and increasing the fire risk through the proliferation of IAP species (IR3).

Table 5. Environmental challenges for the Kogelberg Biosphere Reserve Company in fulfilling their envisioned role in the Kogelberg Biosphere Reserve.

Theme	Theme Description	Example Quotes
Environmental	Environmental challenges for the KBR in fulfilling its envisioned role	*"Fire is a big threat to us, and the whole impact that all of that has"* (IR1). *"If we don't bring these invasive species under control, then they're going to take over the whole place"* (IR9) "[Municipality] *would have everybody just clear their plots and cement them so that they have no fuel on them. We've been engaging with them over that question. There are different opinions. Some people, they treat, for example, they said all the vegetation must be cut down to point five of a meter. Now, when you're dealing with, it's not a grassland, you know, and, or if you've got trees, you must trim them two meters above the ground. Now what we've got here is shrubs. If you trim them two meters from the ground and leave the top branches, they're going to die. If you mow them to 0.5 m, they're going to die. There was no ecological understanding of that"* (IR9). *"Like this fire thing* [municipality's approach to IAP clearing]. *They're illegal* [cutting down milkwoods], *they're illogical. The fact that they cut it down causes aliens to grow, it causes these 'spansriet'* [pampas grass], *the reeds to grow. It increases the fire risk"* (IR3).

Illegal activities (f = 5) (Table 6) include issues of illegal hunting (IR2), which the KBR is responding to through strategic partnerships (see 'protecting nature' in Appendix A), which include the poaching of proteas and perlemoen (abalone, *Haliotis midae*) (IR7; IR9), and the illegal clearing of protected species (IR2; IR4), which is associated with the municipality's fire prevention strategy (see Table 5). Land invasions and the associated challenges they bring pose a challenge for the KBR (IR4; IR7; IR9). These challenges are difficult to respond to, considering the capacity issues faced by the authorities (see 'lack of capacity' Table 10).

Table 6. Illegal activities as a challenge for the Kogelberg Biosphere Reserve Company in fulfilling its envisioned role in the Kogelberg Biosphere Reserve.

Theme	Theme Description	Example Quotes
Illegal activities	Illegal activity posing a challenge for the KBR to fulfil its envisioned role	*"The snaring here is shocking!"* (IR2). [According to the Nature Conservation Ordinance No.19 of 1974, snaring is a method of trapping and therefore an illegal hunting method in Western Cape, South Africa] *"Number one, big pressure point, is Knoflokskraal. There's a land invasion. It's completely outside the law. The government is not in control anymore. They're* [invaders] *just going to continue. They're going to take the next piece of state land and the next piece of state land. That is a major issue"* (IR9). *"It's all kinds of illegal activity, and people go in there with 5 or 10 bakkies* [pickup truck] *a day, and just clear proteas. They have a photocopied license from DFFE. No one knows whether it's authentic or not. You phone people and they're just not interested. We've been writing letters, writing emails, we've got a paper trail, a couple of kilometers long of all the things that have been going on since the* [forestry] *exit"* (IR7).

Table 6. *Cont.*

Theme	Theme Description	Example Quotes
Illegal activities	Illegal activity posing a challenge for the KBR to fulfil its envisioned role	*"I mentioned that* [municipality's approach to IAP clearing] *because fire is a major threat in the area and our municipality sees their responsibility—fire breaks. . ., they'll brush cut what's easy to brush cut. But where alien vegetation is growing in areas that's difficult to access, and places where they're responsible, but just difficult to access. 'No, no, no that I* [municipality] *will just leave'. These areas that are serious threats to runaway fires, those are left. It's very easy to tell the plot owner, just by the way, you haven't developed your plot yet, but you've got to give a brush cut once every two to three years. Down to ankle height. There'll be a milkwood* [*Sideroxylon inerme* are a tree species protected by South Africa's National Forests Act.84 of 1998] *or something—doesn't matter. You just brush cut it. It is going completely against* [ecological understanding and the law]*"* (IR2).

Government (f = 3) challenges (Table 7) include the perceived lack of support from government, specifically some local municipalities and national that the KBRC have difficulty collaborating with to find solutions to problems—suspected to be due to political reasons (IR1; IR2). Additionally, there are views that government does not take the KBR seriously (IR7), and that the engagements between government and the KBR seem superficial, in that public officials only engage due to obligations (IR2).

Table 7. Government as a challenge for the Kogelberg Biosphere Reserve Company in fulfilling its envisioned role in the Kogelberg Biosphere Reserve.

Theme	Theme Description	Example Quotes
Government	Reference to challenges with local, provincial or national government	*"One of our BIGGEST challenges is the* [XXX] *Municipality. Because of all sorts of political reasons, they are just not coming to the party"* (IR1). *"The mayor of* [XXX] *Municipality. . .* [The KBRC] *cannot get a meeting with a guy. Not for anything"* (IR2). *"I feel that the biospheres* [reserves] *in the Western Cape don't get support from national* [government]*"* (IR1). *"But then a big problem has been* [the KBRCs] *inability to get government to be part of solutions. . ."* (IR2). *"The people attending the* [stakeholder] *meetings, the stakeholders from government, . . . I don't think they were really taking the* [KBRC] *board seriously. I think it was a meeting that they* [government officials] *had to attend.* They [government officials] *were ticking a box. . . enduring the meeting"* (IR2).

3.7. Envisioned Role: Effectiveness

There was a mixed response to if the BR is believed to be successful in terms of fulfilling its mandate. One participant had conflicting perceptions, saying: *"The old response in Afrikaans would be 'ja, nee'. Yes and no"* (IR4). Participants described success in some areas and not in others. Earlier years were unsuccessful, however, with recent years becoming more successful and achieving more. This improvement is captured in the following statement: *"For the first two or three years, I saw absolutely no progress. But I certainly have seen, escalating in the last two years, better and better response. Especially with* [coordinator] *holding the reins. I think this is what was vital to the organization—having this one person who's totally passionate about it"* (IR2). Staff joining in more recent years believe *"*[the KBRC] *have a lot more to do, but yes* [there is success]*"* (IR5) and *"it could be better"* (IR8). IR4 stated: *"How do we know? . . . In any formal sense you say that's our specific outcome that we're wanting to achieve. You measure success in terms of how close you are to your defined outcome. We don't have a defined outcome. Maybe that's something we need to do"* (IR4).

When asked what accounts for the recent effectiveness (Table 8), cited factors included the type of people involved (f = 5), leadership quality (f = 3) and full-time staff (f = 2).

Table 8. Factors instrumental in the increased effectiveness of the Kogelberg Biosphere Reserve.

Theme	Theme Description	Example Quotes
Type of people involved	Strategically selecting directors with skillsets	*"Whether* [the KBRC's] *effective or not, is dependent on who does it"* (IR4). *"A nice group of people"* (IR8). *"I think that our success now over the last two years, has been, we've got more interest. We've got a good balance of people sitting around the table now who are interested in the growth, the general growth, not conservation, per se, and not development per se. I think that our board we have are more enthusiastic and more interested in moving in the right direction. There was a board* [previously] *that I don't think was moving in the right direction. . ."* (IR2).
Leadership quality	Reference to staff holding a leadership position	*"When* [the chairperson] *took over, there was a big shake up. Now it's achieving."* (IR7). *"You certainly do need. . . I want to say charismatic, energetic leadership, whatever you call that leader.* [The chairperson], *is a wonderful example.* [The coordinator] *is a wonderful example"* (IR4). "[The chairperson is] *enthusiastic, . . . Can you imagine if it was someone else? It wouldn't work. . ."* (IR9).
Full-time staff	Reference to full-time staff	*"I think the one full-time* [staff] *member is the biggest, biggest reason for being more successful now. . ."* (IR6).

Participants were asked to describe the BR successes and failures (Table 9). Importantly, failures are not only areas that have gone completely wrong but rather where they believe there is room for improvement and recognizing a learning opportunity.

Table 9. Successes (areas going well) and failures (areas for improvement) of the Kogelberg Biosphere Reserve.

Successes (Areas Going Well)	Failures (Areas for Improvement)
Alien invasive plant clearing, e.g., Hangklip Conservancy, with the GWUA and on private land (IR1; IR3; IR5; IR6; IR8).	Anti-BR and negative perceptions associated with the KBR because of the predecessors of the KBRC, KOBIO (IR1; IR2; DR4).
Wildlife Rehabilitation Centre and training volunteer wildlife first responders (IR1; IR4).	Broken partnerships due to lack of reporting—capacity issue (IR2)
Source-to-Sea project—youth environmental education and work (IR2; IR5).	Consistent messaging about the KBR and communication with partners–communication model (IR6)
Building and strengthening local partnerships, e.g., WWF and Cape Leopard Trust (IR2; IR6).	Inability to get government to be a part of the solutions (IR2).
Social media growth and network—growing awareness (IR2).	Lack of community involvement and awareness of the KBR (IR2; IR5; IR6; IR7; IR8).
Stony Point and the MPA are believed to not have been established if the KBR were not in the area (IR3).	Policy regarding fire management, which is enforced by the municipality (IR3).
Preventing the Palmiet River from being dammed and the Kogelberg Valley flooded, and water security project with the City of Cape Town (IR3).	Food garden project that withered away because the KBRC saw it as its own and therefore lacked community support (IR4).
Job creation, e.g., forest rangers and in IAP clearing projects (IR5; IR7; IR8).	Not having the correct people (IR6).
Rooiels Ecological Corridor (IR4).	Not keeping up to date with compliance and the rule of law (IR8).

3.8. Stakeholders and Critical Relationships

Stakeholder participation is *"very much project driven"* (IR1). For specific projects the KBR arrange meetings with relevant stakeholders to explain the need for their help and ask if they are interested in collaborating (IR1). There is a growing interest from stakeholders

(IR2) who *"want to come to the meetings, and they want to participate. They say, 'how can we help you? How can we work with you?'"* (IR1). One avenue of participation believed to be useful are the workshops (IR8; IR9). *"It was nice because we all sat together with the authorities… That was a nice participation method* [workshopping] *of getting everyone's ideas out. Not just one-sided ideas"* (IR8).

The KBR believe *"it's important to build up a good relationship with government"* (IR2), which in some cases they have, for example the Overstrand Municipality (IR9), who were described to be *'very much on top of it'* and described themselves as having a *"great working relationship with them, they want to be part of everything"* (IR1). WWF is also considered a critical partner (IR2; IR9) *"because conservation is not high on the list for government so we're never going to get the funding or the support that we need from government. But private entities like WWF, …, they have a lot of funding, … a lot of resources"* (IR1). More in Appendix B.

3.9. Stakeholders and Critical Relationships: Challenges with Participation

Participants identified challenges with regards to stakeholder participation (Table 10), including the lack of capacity (f = 3), which is often a limitation (IR4), and restrictive legislation (f = 2), which restricts key stakeholders' ability to act (IR4; IR8). The tension of capacity and legislation results in civil society believing that key stakeholders do nothing at all (IR4). The lack of consensus (f = 2) or '*differences in opinion*', i.e., polarization, is also an issue, but driving specific agendas is also difficult to manage (IR5; IR9).

Table 10. Stakeholder participation challenges within the Kogelberg Biosphere Reserve.

Theme	Theme Description	Example Quotes
Lack of capacity	Participants referring to the capacity of stakeholders (i.e., the stakeholders potential or ability to perform a task)	*"That tension between capacity and having to operate within the parameters that are laid down legislatively. Those are the challenges, the problems that governments up against. On the civil society side, folks don't understand, don't realize the extremely limited capacity that they have and the restrictive nature of a lot of the legislation that government works under"* (IR4). *"I think on the government side, one of the things, or two issues… the one is capacity. They just don't have enough people to do enough things… For example, confronting the poaching issues along this coastline. Neither CapeNature nor municipal law enforcement really has the capacity to police the coastline adequately. That's just one illustration and various other examples. The whole question of having enough rangers to police the mountains, where just presently there's a problem with flower poaching. Big problem"* (IR4).
Restrictive legislation	Participants referring to legal frameworks in which stakeholders must act	*"I think with key stakeholders, the regulatory and legislative framework is pretty much set in stone. What we might wish for cannot be done because there's legislation already designed for it. The authorities could only work within that framework, and their hands are tied with anything else"* (IR8). *"You buy a property; you can do what you like with it. Environmental Management and CapeNature must stand there with their arms folded. There's absolutely nothing* [Environmental Managers or CapeNature] *can do"* (IR4).
Lack of consensus	Participants referring to differences in opinion	*"When people don't agree sometimes with what we are trying to achieve, and then try to force their way"* (IR5). *"People are highly divided on how to deal with baboons, for example this one group of people that says, 'shoot them all'. There's another group that says, 'let them do what they want'. There are people that say don't feed them, other people do feed them. …, different interpretations of how to deal with things is a challenge"* (IR9).

There are key stakeholders, or critical partners, whose participation is believed to be missing. These include representation of the full diversity of landowners (f = 5). For example, '*community leaders*' (IR5), as well as farmers which are key actors who manage large portions of land within the KBR are missing. *"*[The KBRCs] *interaction with farmers is supposed to be good, or strong. …, but it's not there. We don't interact with the farmers union. Maybe that's a serious gap because they manage land"* (IR3). In terms of demographic,

younger people, people of color, and poorer people, are perceived to be missing despite acknowledging the importance of having diverse stakeholder groups (IR1; IR2).

Participants stated that political actors from some local municipalities (f = 2) within the BR footprint, including mayors and municipal actors tasked with environmental management, are absent (IR2). There is a perception that *"the whole BR thing as far as* [key stakeholders are] *concerned is a waste of time"* (IR2), possibly due to the BR not being politically powerful. Furthermore, there is believed to be a lack of support from higher levels within the municipality. IR3 stated: *"I think the* [XXX] *municipality is there. The lady is there, but I don't think the environmental section in the* [XXX] *municipality. . . I think they are so used to not having any real power or support from the top"*.

Government departments (f = 2) are believed to be missing. *"There's a huge disconnect between* [the KBRC] *and national government"* (IR2). In this case it would be beneficial if the BR could engage with them around certain challenges, including issues in the forestry exit areas, i.e., previously commercially driven afforested areas being returned to their natural productive state (IR7).

3.10. Stakeholders and Critical Relationships: Institutional Overlap and Disruptive Stakeholders

Institutional overlap in terms of mandate occurs with multiple actors in the landscape, for example SANBI, CapeNature, local municipalities and WWF, in connection with environmental education (IR1) and IAP clearing activities (IR1). Participants believe the challenges therein are coordinating and creating cohesion between the actors so that there is reduced duplication. One participant stated: *"It's to get them all together and say, let's just put all the resources together and work, design a plan and work according to the plan"* (IR1). Participants generally perceive overlap presents an opportunity, believing *"that you could be so much more efficient if you coordinated those efforts and put together some kind of plan"* (IR9). One participant stated: *"I think the overlapping of the NPCs* [non-profit companies] *is vital. The conservancies, WWF, and efforts to protect the natural resources"* (IR2). The idea is that the KBRC *"mustn't walk, I think, on other people's jobs, but rather empower the existing groups or empower new groups"* (IR4). While some of the benefits would be greater efficiency and the *"opportunity is probably, if you can coordinate them, they can have a louder voice because we know the world is turned around politics or pressure"* (IR3). The perception is that overlap should enable support from government (IR2; IR5; IR6), however some said it has no impact in this regard (IR3; IR8).

There are few stakeholder groups that participants believed could be or are disruptive—or are in some cases *'inappropriate'* (IR3), as they do not align to the values of the KBR. These are the more radical activist type groups (IR1; IR2; IR9), political groups (IR3; IR5) and lawbreakers (IR7).

3.11. Lessons Learned to Share across the World Network of Biosphere Reserves

Lessons the KBRC would share with emerging or newly established BRs include three themes. The people (f = 6) are important. Participants believed that having one full-time individual is vital (IR1) and directors need to be chosen strategically, depending on what is needed and for their passion (IR6; IR7). Directors need to be *"people that are genuinely interested in solving the problem. Not people that want to be there because it might be something in it for them"* (IR7). Furthermore, the inhabitants need "*to really understand the concept of a BR, in which the relationship between the natural processes and ecological processes and the cultural, social, and economic processes of human society are somehow working in sync"* which is believed to be "*critical for a biosphere* [reserve] *to justify its existence"* (IR4).

In terms of legality, governance, and compliance (f = 3), it is important to "*get the governance thing sorted out quickly"* (IR2), i.e., the correct people as staff and partners, and to get strategic plans in place early on. Furthermore, to keep up to date with the rule of law and "*never lose sight of compliance"* (IR8) and having *'legal teeth'* (IR9). In the South African context this would be an IUCN Category V *'protected landscape'* (IR9).

Understanding the SES (f = 2), i.e., *"take the time to know your environment and your community"* (IR5). Understanding the SES is important because *"the* [social-ecological] *environment should in fact, direct what needs to be done"* (IR3), and will help the BR prioritize activities. This highlights the importance of the local context, and how understanding it may help apply lessons learnt in other areas, both appropriately and successfully (IR5).

4. Discussion

4.1. Envisioned Role of the KBR and Their Alignment with UNESCO Policy

The KBRC aims to protect their natural environment and build harmony between humans and nature [13], and has the vision to be *"the Cape Floral Kingdom's model sustainable living environment for all"* [26]. The KBR's vision for success is to be an organization with a network to connect stakeholders, create awareness and a sense of place amongst its inhabitants, create socio-economic opportunities, foster stewardship, and be a model site for sustainability. The BR taking on this role resembles what Cockburn et al. [27] refer to as a *relational hub*, which is a central point connecting diverse stakeholders to foster collective action. These hubs enable relationships to be built between humans, much like the KBR's envisioned role for connecting and coordinating stakeholders for collaboration, and for building it between humans and nature, such as KBR's vision of fostering stewards of the land [27].

In achieving their vision, the KBR focus on the local context, conceptualizing projects based on the current needs in the landscape. Although they are familiar with UNESCO policy guidelines, such as the LAP, KBR has found implementation of LAP in practice overwhelming, leaving the KBR with the perception that not much is achieved. Instead, the KBR focus on the co-designed and science-based *pressure points* (with the PAG), and social needs considered priorities within the SES, finding greater alignment with the SDGs, a national imperative.

4.2. Governance Model and Structure Adopted by the KBRC

Their governance model is strategically positioned to help enable their envisioned role. The KBRC have adopted what the Technical Guidelines [8] refer to as the *Non-Governmental Organization (NGO) model*, in this case an NPO. Using this model, the KBRC provides a platform, or relational hub [27], to bring together stakeholders to discuss matters, with the best interests of the community in mind. Similar to how Müller [28] describes BR models, the KBRC is not necessarily responsible for implementation, but rather interacts with other actors in the landscape to implement decisions facilitated through the platform. This model is best described by what Kooiman et al. [29] and Edelenbos and van Meerkerk [30] refer to as *interactive governance*—a model in which many actors are involved in governing the SES. This form of governance places emphasis on finding solutions to everyday challenges through interactions and creating opportunities through civil, public, and private actors [29,31]. According to interactive governance theory, higher orders of governance, i.e., *meta-, or third order governance* involving underlying principles and values, guide the everyday actions of governing [29]. This is experienced in the BR model, in which the UNESCO MAB guiding policy, i.e., Statutory Framework LAP, and Technical Guidelines [1,8,9], provide guidance to BRs; however the KBR tailors implementation to fit its SES context.

The Technical Guidelines [8] identify three components that must be fulfilled within an effective BR governance structure, i.e., a *management/coordination team* of full-time employed staff who work on activities with an available budget, a *management, steering or executive committee* made up of key stakeholders and who work closely with the coordination team and is responsible for proposing actions and evaluating implementation, and an *advisory board* that provides an oversight function and is used for consultation purposes. The KBR compliments this structure via their directors, coordinator, technical committee and PAG, but there is significant overlap in performing these roles—possibly to overcome constraints in human resources.

KBRC is led by the BofD, with which the coordinator works closely. Having the coordinator work closely with the directors is known to increase board effectiveness [32]. There are nine directors that are diverse in terms of age, gender, and culture, serving (a maximum of six years) on the board, all of whom have specific responsibilities, depending on their expertise. Directors are strategically selected based on personal skills, knowledge, expertise networks and connections, which are said to be key qualities of directors [33] and believed to have increased the KBR's effectiveness. Strategic selection, in combination with de-incentivizing the board and strong leadership, is believed to have contributed to building the KBRC with the correct '*type of people*', i.e., people that are genuinely interested in solving problems and not in it for personal gain, because the success of the BR is determined by the personnel that implement it. This is a lesson offered by the KBR: that BRs need strong, charismatic leaders, people serving for the right reasons and full-time staff. Personnel are also similarly motivated to support the BR and have a shared vision—also proven to increase effectiveness [32]. Building a board strategically, which is both diverse in skills and expertise, and in demographics, creates a heterogenous group that is less likely to be subject to *groupthink* and more likely to offer creative solutions through their diverse perspectives [33]. However, to build such a board takes time and can become valuable for the organization. The decision to retain directors for a maximum of 6 years and intermittently allow for change is beneficial because boards continually need upgrading in terms of skills and knowledge, but it also allows knowledge to be transferred between older and newer additions to the board—maintaining institutional memory [34,35]. When thinking of sustainability, the involvement of future generations, including youth, in decision-making processes is important [36,37]. Including youth on the board and progressing towards establishing a Youth Board is innovative thinking and consistent with transformation occurring within South Africa's BR population, which initiated a national Youth Network in 2023. Furthermore, evidence suggests that increased diversity on boards increases their effectiveness [32,38]. Finally, good (regular) meeting practices are considered essential [32,33,38]. The KBRC have regular board meetings, which are a place to plan, discuss and vote on decisions, and are held every second month, along with proposed agendas that accommodate the addition of items by participants.

Moreover, in adopting this collaborative approach, and in line with the Statutory Framework [9], the KBRC rely on the technical committee and the PAG. This committee is an attempt to deal with the issue of '*silos*'—convening critical partners to build consensus and establish areas for collaboration. Through their SES analysis and model description of the KBR, the PAG have guided the projects and programs that are now prioritized—targeting what have been identified as *pressure points*. Working closely with these two stakeholder groups allows for integrated responses, through de-fragmentation and breaking silos that are necessary to overcome complex issues [30]. The integrated responses in identifying problems and finding solutions to them, whether from the technical committee or PAG, also aids in the diversity of responses—an important resilience factor in SES [28].

Characteristic of the NPO model is its *project-orientation* [8]. Stakeholder participation within the KBRC is *project-driven*, which is why stakeholder involvement is so dynamic, ranging from one-off collaborations to long-term partnerships. The KBRC bring together civil, private, and public institutions to discuss matters with the best interests of the community in mind. This is important considering that when dealing with complex, diverse and multiscale societal and environmental challenges, or *wicked problems*, no one actor has the knowledge, information, jurisdiction, or capacity to deal with them independently [28,39] and therefore collaborative initiatives or collective action are best suited for dealing with wicked problems [40]. Cockburn et al. [41], define *collaborative initiatives* as multi-stakeholder arrangements working together to overcome social–ecological challenges. To fulfil their envisioned role and answer the MAB Strategy's [1] call for collective action, the KBRC actively search for stakeholders in the landscape with whom they can collaborate with, to find solutions to solve specific challenges. Growing interest in the KBR has resulted in stakeholders seeking opportunities for participation.

The KBR engage with various stakeholders as needed, i.e., their collaboration and coordination role, to fulfil their role within the SES (through projects and activities). Engaging with stakeholders can occur in many ways, ranging from individual volunteers to the involvement of organizations, in which their efforts consist of interacting with other landscape actors, directly addressing specific problems, or working with communities to deal with challenges [42]. These engagements, according to Arnstein's [43] ladder of citizen participation, occur at levels ranging from '*informing*' and '*consulting*' through outreach and workshops, to '*partnerships*' with actors and, in some cases, '*delegated power*', e.g., GWUA who now manage the IAP clearing project. The KBR's socio-economic development role, which serves their vision in wanting to create opportunities, is fulfilled through partnerships with the ODM, NGOs, and other institutions to implement projects in economic growth, environmental education and youth development, and sustainable natural resource management. Similarly, the KBRC fulfil their role in conservation, which includes protecting nature and securing water, through partnerships. Joining alliances to target the SDGs meets the recommendations provided in the LAP [1]. Furthermore, these sorts of inclusive governance approaches are considered necessary to meet the SDGs in contexts that involve decentralization and fragmentation of many actors operating at different levels and scales [42]—the BR context.

Additionally, the KBR's mandate overlaps with multiple actors in the landscape, which according to Müller [28] can build resilience through the redundancy of actors in the SES. The KBR perceive these overlaps to be vital, as they present opportunity for pooling resources, coordinating responses and collaboration, and potentially gaining government support. However, the challenge is believed to be coordination, creating cohesion, and avoiding duplication.

4.3. Implementation Challenges in the KBR

Stakeholders knowing about the BR, being willing to meaningfully participate, and having sufficient interest to do so will enable their participation. According to Pool–Stanvliet [44], being able to adequately convey the BR concept remains a challenge for many BRs. The KBR struggles with a 'lack of awareness', in which many inhabitants do not know about the KBR or what a BR, which in turn hinders their ability to meaningfully engage with the BR. BRs are dependent on their awareness and communication for its successful implementation [45]. One way to overcome this, as Coetzer et al. (2014) [10] stated, is using social media and technology to disseminate information about the BR and ensure BR '*brand*' recognition in an accessible and relatable manner. In this respect, the KBR has experienced growth in their online presence, and this has been described as one of their successes. Social media has been an important medium to attain this level due to its self-propagation characteristic [10,46], and is believed to have been important in growing awareness of the KBR. However, despite recent growth and being able to successfully build local partnerships, broad-based community stakeholders, i.e., landowners, residents, and farmers, are believed to be missing. The full diversity of participating stakeholders is regarded as integral for increased effectiveness [47] and is perhaps a shortfall of the KBR—only meeting with a wider stakeholder group twice a year, one being the AGM, where all interested and affected parties are welcome to attend and engage in dialogue surrounding KBR governance.

KBR inhabitants not conforming to *biosphere living*, i.e., living in harmony with the environment, is a further challenge for the BR. The disconnect between humans and nature is due to living in human-dominated and modified landscapes and lack of interactions with green spaces [48,49]. Developing a sense of place and connection to the environment is a vision of the KBR, and evidence suggests that people who are more connected to their local environment will be more motivated to protect it [48,49]. Swemmer's [50] results in the case of environmental monitors (EM) working in the Kruger to Canyons BR (K2C), South Africa, supports this. Before participation in the EM program, EMs had no understanding of the value of biodiversity, but through their participation they started naturally acting

as conservation ambassadors and change agents actively propagating the BR message through their communities, outside of their EM jobs [50]. The KBR provide the opportunity for locals, particularly youth, to be involved in their conservation efforts, for example through their IAP-clearing hack groups and Source-to-Sea project, which may produce similar outcomes to the EMs in the K2C. Engaging people in dialogues about the natural environment, especially youth, is key to addressing this disconnection [48,49]

Establishing management systems for participation, i.e., stakeholder participation and governance structures, and the delivery thereof, i.e., resources and strategic plans, is critical for BR success, even more so than the stakeholders' understanding of the BR concept [45]. The governance model implemented by the KBRC should allow for adequate stakeholder participation, especially in their structure, keeping their key stakeholders, i.e., technical committee and PAG, close by. However, this could be improved for the wider stakeholder group, and possibly though better awareness of the KBR and its mission. Furthermore, in the delivery thereof, the KBRC have well designed and informed strategic plans that have been developed through the input of the PAG. Therefore, what seems to hinder their implementation are sufficient support and resources required to successfully enact and, in addition, the unfortunate fact that even the best-designed systems can be overruled by external issues, such as poverty, corruption, and weak governance [51].

South Africa experiences political infighting and clashing between politics and management within the sphere of local government [52], which is an important consideration seeing that it is responsible for service delivery. It is within this socio-political context that the KBR (and other BRs in South Africa) must operate, which undoubtedly impacts the broader '*buy in*' for the BR '*brand*' in two respects. Firstly, in increasing support for the notion of conservation that can '*work for the poor*' [10], and secondly, at local scale, where local social-economic factors may overrule longer term sustainability aspirations held by various stakeholders in the landscape.

The KBR lacks support in the form of human and financial resources, specifically operational funds, which is severely constraining their potential impact by limiting their capacity. Like other BRs in in the Western Cape, South Africa, the KBR receive limited financial support from the Department of Environmental Affairs and Development Planning—a critical partnership for the KBR. Van Cuong et al. [45] found that the lack of resources available to BRs is a major factor leading to their failure, and that resource limitations have proven to be significant setbacks for implementing the MAB in developing countries. Furthermore, resources are needed to establish continuity and trust in engagement with stakeholders [45]. Supporting this claim, the BR believes that improved success has come after establishing a fulltime coordinator—allowing for consistency and continuity and stronger relationships with its stakeholders. This has allowed the BR to experience more growth and success in forging local partnerships. However, determining the success of the KBR seems to remain a subjective task with the lack of a measurement system, i.e., specified goals or outcomes, with which to objectively measure their performance [26].

Furthermore, government commitment and involvement in BRs are critical for their success [45]. Pool–Stanvliet [44] discovered that MAB implementation in South Africa faces issues of horizontal and vertical integration with local actors and national government. The lack of integration undermines the intended purpose of BRs to demonstrate *"sustainable systems and innovative approaches in support of resilience of SES and fostering transparency through partnerships"* [53]. This is the experience of the KBR, who have limited support from national authorities, and who have difficulty solidifying partnerships and support from some local municipalities and actors. The KBR have working relationships with some local government actors who are providing operational support and wanting to collaborate. However, the KBR sees an opportunity for more support from local and national government, who they regard as '*missing*' critical partners, to improve its operations. The absence of some government actors is perceived to be because of '*political reasons*'—either political opposition parties or wanting to politicize the BR. The KBR believe politics can be disruptive to the BR and thus avoid those who attempt to use the KBR as a political instrument. This is a

setback for the KBR, as they have projects that they hope to launch within regions where a lack of support from government agencies is not forthcoming.

Although subject to change, currently BRs do not feature prominently in South Africa's national environmental legislation and policy system, and although supported by the national government during the nomination process thereafter, they are expected to forge their own way in successfully implementing the MAB [44,51,53]. The reality for South African BRs is that they operate without legal '*teeth*', apart from the formally protected core zones [5,53], and are implemented through '*soft law*' [3,53]—largely relying on adherence with national policy around linked matters for enforcement and/or management. The absence of legislation to enforce the KBR and lack of sufficient *buy-in* from some critical partners and government limits their authority to act, which is believed to weaken NPO governance operations [45], limits technical and financial support and thus impact [30], and potentially threaten the legitimacy of the BR as an organization [54].

However, the lack of authority can be overcome by becoming a *legitimate* organization, which is *"the validity of an organization's authority to govern"* that is earned through social acceptance [54]. The data suggests that the KBRC is challenged by not being recognized as the legitimate management entity by some actors in the landscape. This could in part be because of the negative image left by their predecessors or because of a lack of awareness and communication [47], which is a perceived failure of the BR. However, at the same time it may be argued that the KBR is increasing its legitimacy, which is evident in building long-term partnerships with NGOs and experiencing increasing membership numbers. Nonetheless, the lack thereof may threaten their ability to fulfil their envisioned role of being an organization that can foster collaboration and coordination, given that their purpose is to provide a platform for cooperation between actors in the BR [51]. Therefore, greater efforts towards improving their public image and encouraging greater, i.e., regular and consistent, participation in decision-making is required if they want to be fully accepted as a local partner and fulfil all their functions successfully across the SES [45,47,51].

A common criticism of case study research is that its findings are not generalizable, due to issues of external validity [55]. However, this research was exploratory, with the objective of providing a contextualized understanding of MAB implementation within the KBR. For this reason, the sample was purposefully based on the criteria of being associated with the management entity, i.e., the KBRC, to provide an '*information-rich*' case [56]. This research was driven by the need to understand the institutional context and governance strategies of BRs in the landscapes in which they operate [3,7,10,11]. Although the results are not directly transferable to other BRs (cases), there is a need to understand and compare lessons learnt from each site ('case'), to improve the implementation of the MAB program [1,10]. This research builds on the strength of MAB, which is an opportunity for place-based learning. In the absence of implementation blueprints, case studies such as this can offer valuable lessons and experience in implementing MAB, to ultimately determine what works, why, and for who? Future research should explore other BRs to develop contextual understandings of MAB implementation in their local environments (case studies). This will fulfil the need *"to communicate the experiences and lessons learned, facilitating the global diffusion and application of these models"* identified by UNESCO [1]. Future research should possibly include the perspectives of key stakeholders, specifically their perceptions and expectations, which may help provide a more holistic understanding of the BRs local image, i.e., its 'brand'.

5. Conclusions

This research explored the KBR context of both interpreting and implementing the MAB and, as such, how global policy is contextualized for local conditions. The place-based nature of the MAB allows the KBR to adapt and evolve to deal with local pressures. In-depth learnings, such as this, can aid implementation elsewhere while providing insights in sustainability science. Lessons provided from the KBR case study may be useful to other

BRs operating in similar conditions, and especially to other BRs in the Western Cape of South Africa.

The KBR offered an interesting case, as it was established as being bottom-up. After being established shortly post-Seville in 1998, which turned the focus to sustainable development and arguably motivated South Africa's buy-in to the program, it has been in operation through several iterations of MAB policy, i.e., MAP and LAP. The KBR operate within the statutory frameworks' core functions, for example socio-economic development, conservation and fostering collaboration amongst actors and coordinating them.

The KBR implementation strategy is driven bottom-up from local pressure points within the SES, which are aligned with the overarching global SDGs. Local pressure points were co-designed with an important community stakeholder group, the PAG. Instrumental in their growing effectiveness has been the people involved—a lesson provided from the case. Strategically selecting directors to fill the KBRC with the correct type of people who are genuinely interested in solving problems, will provide a strong, charismatic, and energetic leadership, and full-time staff have increased the effectiveness of the KBRC.

Operational challenges experienced in the KBR, i.e., lack of support, resources and awareness, and illegal and environmental problems, have caused it to lean towards adopting an NPO interactive governance model, in which it performs the role of a relational hub. In doing so, they rely on the formation of partnerships, interacting with actors in the landscape to de-fragment and break existing silos. This enables them to create opportunities for collective action within the SES. Despite having excellent strategic plans and strong support from some interested and affected parties, a tension exists between their capacity to offer meaningful participation from broad-scale stakeholders, building stakeholder interest and acceptance through awareness and communication, and becoming a legitimate organization that can provide value to its inhabitants. Fundamental to this tension are the limited resources at the BRs disposal, and the inability to gain support from some important public institutions. Looking forward, despite the KBR undergoing a slow establishment and near collapse in early years, it has regenerated itself and become a more effective BR with growing support in recent years.

Pioneering place-based knowledge-action networks for sustainability is an opportunity within the WNBR [7]. If we are to realize the value of place-based learning for sustainability to meet global [un]sustainability challenges, individual sites may not be sufficient alone [7]. However, most of the BR literature available is skewed to the Global North, underrepresenting the Global South—particularly Africa, and in-depth knowledge from individual sites at the scale of the entire BR organization seems to be lacking altogether. This research presents a remedy to this—and while admittedly presenting one site with the limitations of generalizability, which is due to the nature of case study methodology—still allows for learning and knowledge sharing on how things have been 'done' in the context of the KBR. South Africa has been a part of the MAB network for over a decade now, and is relatively new, and these case-specific lessons offer much value to the newer BRs in the country from a practical standpoint. Further, if similar in-depth research could be conducted in other globally representative BR 'cases' in the future, MAB implementation could certainly benefit from integrated comparative learning of the experiences, successes, challenges, and lessons provided through these sites by those who learn-by-doing.

Author Contributions: Conceptualization, B.C., K.C. and M.K.; methodology, B.C., K.C. and M.K.; software, M.K.; validation, B.C., K.C. and M.K.; formal analysis, M.K.; investigation, M.K.; resources, B.C., J.G.S., K.C. and M.K.; and; data curation, M.K.; writing—original draft preparation, M.K.; writing—review and editing, B.C., J.G.S., K.C. and M.K.; visualization, M.K.; supervision, B.C., J.G.S. and K.C.; project administration, B.C., J.G.S., K.C. and M.K.; funding acquisition, K.C. and M.K. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the National Research Foundation's (NRF) Global Change Social Science Research Programme (GCSSRP V2), Grant UID: 129482.

Data Availability Statement: The original contributions presented in the study are included in the article, further inquiries can be directed to the corresponding author.

Acknowledgments: The authors would like to thank the Kogelberg Biosphere Reserve Company for their willingness to participate in the research, and L. Bohdanowicz for creating the map.

Conflicts of Interest: The authors declare no conflicts of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

Appendix A

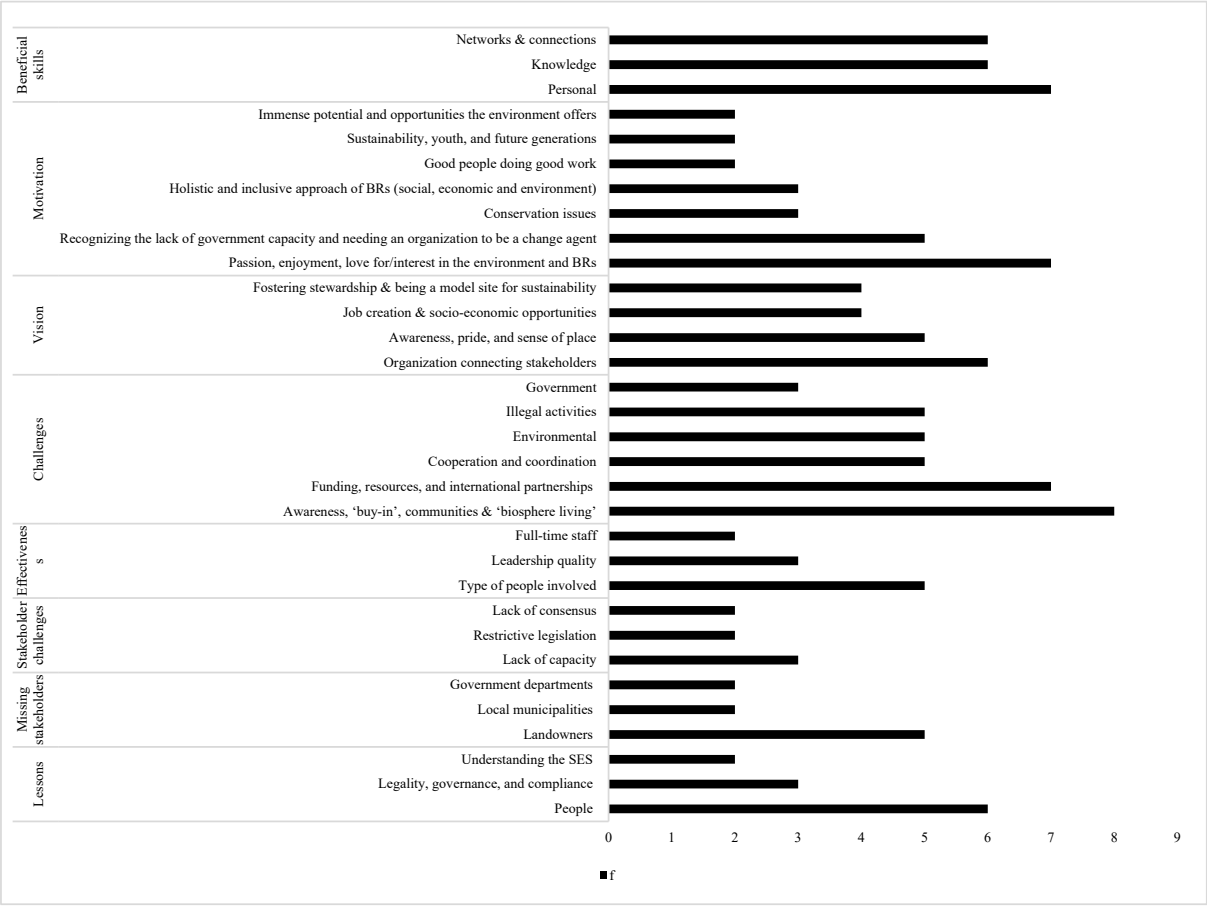

Figure A1. A summary of dominant themes and associated topics (vertical) presented in results. For each theme, the frequency (f) count is provided to indicate its level of prioritization/importance.

Appendix B

Table A1. Kogelberg Biosphere Reserve's role in socio-economic development and conservation at the time of data collection. Socio-economic development programs include those focused on economic growth, environmental education, and youth development, whereas conservation programs include securing water and protecting nature. Within these programs there are various projects.

Role	Program	Project	Description
Socio-economic Development	Economic Growth	Grabouw Development Agency (GDA)	Coordinated the establishment of the GDA, which will address issues of increasing inequalities and unemployment through community business hubs, better-placed shopping centers, a new industrial area, housing for all income levels, sport and recreation areas and job creation through landscape rehabilitation (DR2).

Table A1. *Cont.*

Role	Program	Project	Description
Socio-economic Development	Economic Growth	Grabouw Transformation Project	Partnered with Grabouw Transformation to support local non-profit companies by assisting them with business plans and funding applications (DR2).
		Hangklip and Kleinmond Tourism Working Group	Partnered with the Tourism Department of the Overstrand District Municipality to establish a Tourism Working Group for the Hangklip and Kleinmond areas, to identify tourism opportunities and work to grow them to benefit the local communities and SMMEs (DR2).
Conservation	Environmental Education and Youth Development	Child Welfare Initiative	Partnered with Child Welfare Kleinmond, who are working with Lego Group to support youth in four local schools (DR2).
		Source-to-Sea Eco Rangers	Initiated a Source-to-Sea Kleinmond Estuary Project, supported by UNESCO, which they implement through the Kogelberg Eco Rangers, a group of youth aged between 13 and 22. The project activities include training on Source-to-Sea methodology, organizing a Source-to-Sea race for youth, identifying key flows into the estuary and their sources of alteration, and measuring river quality and quantity (DR2).
	Sustainable Resource Management	Forest Rangers and Trail builders	Collaborated with the ODM and Elgin Grabouw Cycling Association to employ four forest rangers to patrol the forestry exit areas in the buffer zone and report on fires, raise awareness of the importance of conservation and assist youth in trail building.
	Protecting Nature	Kogelberg Wildlife Rescue Unit and Rehabilitation Centre	Partnered with Wildlife Rescue to train volunteers as wildlife first responders who can respond to human–wildlife incidents. They are in the process of establishing a wildlife rescue unit and rehabilitation center for harmed wildlife and where the training will continue. They also collaborated with the Cape Leopard Trust (CLT) and CapeNature to develop Snare Free, a province-wide snare response protocol dealing with "*who, how, when to respond to animals trapped in snares*" (DR2).
		Conservancies and Conservation Societies	"*Nurturing conservancies*" (IR4) through supporting and providing advice. Their work with the Botanical Society (Kogelberg) includes projects such as 'garden circle' and 'plant rescue'. The 'garden circle is about "*encouraging and enabling people to manage their gardens and develop their gardens in ways that are consistent with the natural environment"* (IR4). The 'garden circle' has now evolved into 'plant rescue', which involves rescuing plants when bulldozers arrive at sites of new development, and is thereafter used to rehabilitate other areas.
		Kogelberg Marine Working Group and Estuary Forum	Member of the Kogelberg Marine Working Group and Botriver Estuary Forum, which focus on managing the marine coastal areas of the Kleinmond and Steenbras Rivers through job creation, ecological data collection and information sharing (DR2).
	Securing Water	IAP clearing	Invasive alien plant (IAP) clearing projects with several hacking groups established through partnerships (DR2). "*With the assistance of Dr Cluver of the Cluver Wine Estate, the KBRC and WWF* [World Wide Fund for Nature] *coordinated the establishment of an alien clearing project now managed by GWUA* [Groenland Water User Association]. *The management funding comes from British retailers and is coordinated by WWF. Clearing costs are covered by Land Care, SANBI and property owners. This project focuses on agricultural land that forms part of the fruit export industry. More recently this project has been able to expand into state owned areas where funding has been supplied by SANBI* [South African National Biodiversity Institute]. *These projects are dependent on coordination and support from the KBRC"* (DR2).

Note: Appendix A does not include all the Kogelberg Biosphere Reserve's programs and projects but provides examples of some of the work in which they are involved to fulfil their envisioned role in socio-economic development and conservation at the time of data collection (May 2023).

Appendix C

Table A2. Stakeholders participating in the Kogelberg Biosphere Reserve at the time of data collection. An indication is given of which stakeholders participate with the KBRC to fulfil the specific envisioned roles of the KBR, i.e., collaboration and coordination, conservation, and socio-economic development. Additionally, their relationships, including who they believe they are accountable to, who their critical partners are, and which stakeholders are believed to be missing (with opportunities for further engagement), are also provided. Where no 'envisioned role' or 'relationship' is mentioned, the specifics were not mentioned in the documents or interviews.

	Stakeholder	Envisioned Role	Relationship
International	UNESCO	Socio-economic Development	Accountable
National	Department of Forestry, Fisheries and Environment	Collaboration and Coordination	Accountable; Critical; Missing
Provincial	Department of Agriculture	Collaboration and Coordination	
	Land Care	Conservation	Critical
	Department of Environmental Affairs and Development Planning		Accountable; Critical
District	Overberg District Municipality	Socio-economic Development	Critical
Local	Overstrand Municipality	Collaboration and Coordination	Critical
	City of Cape Town		Critical; Missing
	Theewaterskloof Municipality		Critical; Missing
Parastatals	South African National Biodiversity Institute	Conservation	Critical
	Custodians of Rare and Endangered Wildflowers	Conservation	
	CapeNature	Collaboration and Coordination; Conservation	Critical
NGOs & NPOs	World Wide Fund for Nature	Collaboration and Coordination; Conservation; Socio-economic Development	Critical
	The Nature Conservancy	Collaboration and Coordination	
	Botanical Society (Kogelberg)	Collaboration and Coordination; Conservation	
	Cape Leopard Trust	Conservation	
	Wildlife Rescue South Africa	Conservation	
	Child Welfare Kleinmond	Socio-economic Development	
	Grabouw Transformation	Socio-economic Development	
	Youth for the Environment	Socio-economic Development	Critical
	Fire Protection Association (Greater Overberg)		Critical
	Lego Group	Socio-economic Development	
	Contour Enviro Group		Critical
	Groenlandberg Water User's Association	Conservation	Critical
	Grabouw Development Agency	Socio-economic Development	Critical
	Elgin Grabouw Cycling Association	Socio-economic Development	

Table A2. *Cont.*

	Stakeholder	Envisioned Role	Relationship
Conservancies	Groenlandberg Conservancy	Collaboration and Coordination; Conservation	Critical
	Bettys Bay Conservancy		
	Hangklip Conservancy		
	Pringle Bay Conservancy		
	Rooiels Conservancy		
Civil Groups	Kleinmond Conservation Society	Conservation	
	Landowners/Residents		Accountable; Critical; Missing
	Professional Advisory Group	Collaboration and Coordination	
	Kogelberg Eco Rangers	Socio-economic Development	
Working Groups and Forums	Greater Cape Town Water Fund Operational and Data Working Group	Conservation	
	Boland-Groot Winterhoek Strategic Water Source Collective	Conservation	
	Kogelberg Marine Working Group	Conservation	
	Hangklip and Kleinmond Tourism Working Group	Socio-economic Development	
	Botriver Estuary Forum	Conservation	
	Western Cape Biosphere Reserve Forum (WCBRF)		Missing
Biosphere Reserves	Cape Winelands Biosphere Reserve (CWBR)	Socio-economic development	
Business	Love Green Communications	Other (social media)	Critical
	Cluver Wine Estate	Conservation	

Note: Stakeholder involvement in biosphere reserves is highly dynamic, ranging from one-off collaborations to long-term partnerships. For this reason, it is important to make explicit that the stakeholders in Appendix B are subject to change and were referred to in DR2 and DR5 at the time of data collection (May 2023). Therefore, this is not a fully comprehensive list of the KBR stakeholders.

Notes

[1] The South African '*coloured*' identity, although considered a racial slur in some parts of the world, is not considered a derogatory term in South Africa. In South Africa it refers to a heterogenous ethnic group that have diverse cultural and ancestral linkages that are neither white nor black African, and therefore remains a population demographic and identity of its own.

References

1. UNESCO. *A New Roadmap for the Man and the Biosphere (MAB) Programme and Its World Network of Biosphere Reserves. MAB Strategy (2015–2025), Lima Action Plan (2016–2025), Lima Declaration*; UNESCO: Paris, France, 2017.
2. Carruthers, J. Conservation science and UNESCO Biosphere Reserves. *S. Afr. J. Sci.* **2020**, *116*, 7709. [CrossRef] [PubMed]
3. Pool-Stanvliet, R.; Coetzer, K. The scientific value of UNESCO biosphere reserves. *S. Afr. J. Sci.* **2020**, *116*, 7432. [CrossRef] [PubMed]
4. Baldwin-Cantello, W.; Tickner, D.; Wright, M.; Clark, M.; Cornelius, S.; Ellis, K.; Francis, A.; Ghazoul, J.; Gordon, J.E.; Matthews, N.; et al. The Triple Challenge: Synergies, trade-offs and integrated responses for climate, biodiversity, and human wellbeing goals. *Clim. Policy* **2023**, *23*, 782–799. [CrossRef]
5. Pool-Stanvliet, R. A history of the UNESCO Man and the Biosphere Programme in South Africa. *S. Afr. J. Sci.* **2013**, *109*, 6. [CrossRef]
6. Clüsener-Godt, M.; Köck, G.; Möller, L. Editorial It is about life: 50 years of UNESCO's Man and the Biosphere Program. *Int. J. Environ. Sustain. Dev.* **2022**, *21*, 377–387. [CrossRef]

7. Barraclough, A.D.; Reed, M.G.; Coetzer, K.; Price, M.F.; Schultz, L.; Moreira-Muñoz, A.; Måren, I. Global knowledge–action networks at the frontlines of sustainability: Insights from five decades of science for action in UNESCO's World Network of biosphere reserves. *People Nat.* **2023**, *5*, 1430–1444. [CrossRef]
8. UNESCO. *Technical Guidelines for Biosphere Reserves*; UNESCO: Paris, France, 2021.
9. UNESCO. *Biosphere Reserves: The Seville Strategy and the Statutory Framework of the World Network*; UNESCO: Paris, France, 1996.
10. Coetzer, K.L.; Witkowski, E.T.; Erasmus, B.F. Reviewing Biosphere Reserves globally: Effective conservation action or bureaucratic label? *Biol. Rev.* **2014**, *89*, 82–104. [CrossRef] [PubMed]
11. Ferreira, A.F.; Zimmermann, H.; Santos, R.; Von Wehrden, H. A social–ecological systems framework as a tool for understanding the effectiveness of biosphere reserve management. *Sustainability* **2018**, *10*, 3608. [CrossRef]
12. Ferreira, A.F.; Zimmermann, H.; Santos, R.; von Wehrden, H. Biosphere reserves' management effectiveness—A systematic literature review and a research agenda. *Sustainability* **2020**, *12*, 5497. [CrossRef]
13. Kogelberg Biosphere Reserve. Available online: https://kogelbergbiosphere.org.za (accessed on 25 April 2022).
14. Department of Forestry, Fisheries & the Environment. Kogelberg Biosphere Reserve. Available online: https://www.dffe.gov.za/kogelberg-biosphere-reserve (accessed on 25 April 2022).
15. UNESCO. Kogelberg Biosphere Reserve, South Africa. Available online: https://en.unesco.org/biosphere/africa/kogelberg (accessed on 25 April 2022).
16. Wessels, M.; Veldwisch, G.J.; Kujawa, K.; Delcarme, B. Upsetting the apple cart? Export fruit production, water pollution and social unrest in the Elgin Valley, South Africa. *Water Int.* **2019**, *44*, 188–205. [CrossRef]
17. Schultz, L.; West, S.; Florêncio, C. Nurturing adaptive governance through environmental monitoring: People, practices, politics in the Kruger to Canyons Biosphere Region, South Africa. In *Knowledge for Governance*; Glückler, J., Herrigel, G., Handke, M., Eds.; Springer: Cham, Switzerland, 2020; Volume 15, pp. 293–318. ISBN 978-3-030-47149-1.
18. Bohdanowicz, L. Kogelberg Biosphere Reserve. 2023.
19. Statistics South Africa. Available online: https://www.statssa.gov.za (accessed on 20 November 2023).
20. CapeNature. *Kogelberg Nature Reserve Complex Management Plan 2013–2018*; CapeNature: Cape Town, South Africa, 2012.
21. Van Schalkwyk, J. Beta Diversity across the Complementary Zones of the Kogelberg Biosphere Reserve. Ph.D. Thesis, Stellenbosch University, Stellenbosch, South Africa, April 2019.
22. Otter.ai. *Otter.ai*; iOS; Otter.ai, Inc.: Los Altos, CA, USA, 2023.
23. ATLAS.ti. *ATLAS.ti Student License*, version 23.2.0; Mac. ATLAS.ti Scientific Software Development GmbH: Berlin, Germany, 2022.
24. Braun, V.; Clarke, V. Using thematic analysis in psychology. *Qual. Res. Psychol.* **2006**, *3*, 77–101. [CrossRef]
25. Brennan, N.M. Methodological insights: Interview quotations in accounting research. *Account. Audit. Account. J.* **2022**, *35*, 382–411. [CrossRef]
26. Kogelberg Biosphere Reserve Company. *Towards a Strategic Management Framework for the Kogelberg Biosphere Reserve: Strategic Plan*; Setplan; DJ Environmental Consultants; Envirocentric: Cape Town, South Africa, 2006.
27. Cockburn, J.; Cundill, G.; Shackleton, S.; Cele, A.; Cornelius, S.F.; Koopman, V.; le Roux, J.P.; McLeod, N.; Rouget, M.; Schroder, S.; et al. Relational hubs for collaborative landscape stewardship. *Soc. Nat. Resour.* **2020**, *33*, 681–693. [CrossRef]
28. Müller, K. Resilience thinking and the evolution of collaborative environmental governance in the Western Cape. *Adm. Publica* **2014**, *22*, 5–23.
29. Kooiman, J.; Bavinck, M.; Chuenpagdee, R.; Mahon, R.; Pullin, R. Interactive governance and governability: An introduction. *J. Transdiscipl. Environ. Stud.* **2008**, *7*, 2.
30. Edelenbos, J.; van Meerkerk, I. Introduction: Three reflecting perspectives on interactive governance. In *Critical Reflections on Interactive Governance: Self-Organization and Participation in Public Governance*; Edward Elgar Publishing: Northampton, MA, USA, 2016; pp. 1–28, ISBN 978-1-78347-906-1.
31. Santosa, E.B. Interactive governance framework and its potential for governing protected area landscape. *IOP Conf. Ser. Earth Environ. Sci.* **2022**, *976*, 012017. [CrossRef]
32. Bradshaw, P.; Hayday, B.; Armstrong, R.; Levesque, J.; Rykert, L. Non-profit governance models: Problems and prospects. *Innov. J. Public Sect. Innov. J.* **2007**, *12*, 5.
33. Petrovic, J. Unlocking the role of a board director: A review of the literature. *Manag. Decis.* **2008**, *46*, 1373–1392. [CrossRef]
34. Harvey, J.F. Managing organizational memory with intergenerational knowledge transfer. *J. Knowl. Manag.* **2012**, *16*, 400–417. [CrossRef]
35. Bernstein, R.S.; Buse, K.; Slatten, L.A. Nonprofit board performance: Board members' understanding their roles and responsibilities. *Am. J. Manag.* **2015**, *15*, 24–35.
36. Mitrofanenko, T.; Snajdr, J.; Muhar, A.; Penker, M.; Schauppenlehner-Kloyber, E. Biosphere reserve for all: Potentials for involving underrepresented age groups in the development of a biosphere reserve through intergenerational practice. *Environ. Manag.* **2018**, *62*, 429–445. [CrossRef] [PubMed]
37. Barraclough, A.D.; Schultz, L.; Måren, I.E. Voices of young biosphere stewards on the strengths, weaknesses, and ways forward for 74 UNESCO Biosphere Reserves across 83 countries. *Glob. Environ. Chang.* **2021**, *68*, 102273. [CrossRef]
38. Ortega-Rodríguez, C.; Martín-Montes, L.; Licerán-Gutiérrez, A.; Moreno-Albarracín, A.L. Nonprofit good governance mechanisms: A systematic literature review. *Nonprofit Manag. Leadersh.* **2023**, *2023*, 1–31. [CrossRef]

39. Armitage, D.; De Loë, R.; Plummer, R. Environmental governance and its implications for conservation practice. *Conserv. Lett.* **2012**, *5*, 245–255. [CrossRef]
40. Berkes, F. Environmental governance for the Anthropocene? Social-ecological systems, resilience, and collaborative learning. *Sustainability* **2017**, *9*, 1232. [CrossRef]
41. Cockburn, J.; Schoon, M.; Cundill, G.; Robinson, C.; Aburto, J.A.; Alexander, S.M.; Baggio, J.A.; Barnaud, C.; Chapman, M.; Garcia, L.; et al. Understanding the context of multifaceted collaborations for social-ecological sustainability: A methodology for cross-case analysis. *Ecol. Soc.* **2020**, *25*, 7. [CrossRef]
42. Karar, E.; Jacobs-Mata, I. Inclusive governance: The role of knowledge in fulfilling the obligations of citizens. *Aquat. Procedia* **2016**, *6*, 15–22. [CrossRef]
43. Arnstein, S.R. A ladder of citizen participation. *J. Am. Inst. Plan.* **1969**, *35*, 216–224. [CrossRef]
44. Pool-Stanvliet, R. The UNESCO MAB Programme in South Africa: Current Challenges and Future Options Relating to the Implementation of Biosphere Reserves. Ph.D. Thesis, University of Greifswald, Greifswald, Germany, October 2014.
45. Van Cuong, C.; Dart, P.; Hockings, M. Biosphere reserves: Attributes for success. *J. Environ. Manag.* **2017**, *188*, 9–17. [CrossRef]
46. Maniou, T.A. Semantic analysis of cultural heritage news propagation in social media: Assessing the role of media and journalists in the era of big data. *Sustainability* **2021**, *13*, 341. [CrossRef]
47. George, C.; Reed, M.G. Revealing inadvertent elitism in stakeholder models of environmental governance: Assessing procedural justice in sustainability organizations. *J. Environ. Plan. Manag.* **2017**, *60*, 158–177. [CrossRef]
48. Miller, J.R. Biodiversity conservation and the extinction of experience. *Trends Ecol. Evol.* **2005**, *20*, 430–434. [CrossRef] [PubMed]
49. Soga, M.; Gaston, K.J. Extinction of experience: The loss of human–nature interactions. *Front. Ecol. Environ.* **2016**, *14*, 94–101. [CrossRef]
50. Swemmer, L.K. Towards Improved Benefit Sharing: Approaches and Processes for Assessing and Reflecting on the Societal Impact of Biodiversity Conservation. Ph.D. Thesis, University of Witwatersrand, Johannesburg, South Africa, May 2020.
51. Stoll-Kleemann, S.; O'Riordan, T. Biosphere reserves in the Anthropocene. *Encycl. Anthr.* **2018**, *3*, 347–353.
52. Reddy, P.S. The politics of service delivery in South Africa: The local government sphere in context. *J. Transdiscipl. Res. S. Afr.* **2016**, *12*, a337. [CrossRef]
53. Pool-Stanvliet, R.; Coetzer, K. Innovative implementation of the UNESCO MAB Programme in South Africa. In *UNESCO Biosphere Reserves: Supporting Biocultural Diversity, Sustainability and Society*, 1st ed.; Reed, M.G., Price, M.F., Eds.; Routledge: London, UK; New York, NY, USA, 2019; pp. 176–189. ISBN 9781138369320.
54. Lockwood, M.; Davidson, J.; Curtis, A.; Stratford, E.; Griffith, R. Governance principles for natural resource management. *Soc. Nat. Resour.* **2010**, *23*, 986–1001. [CrossRef]
55. Bryman, A. *Social Research Methodologies*, 4th ed.; Oxford University Press: New York, NY, USA, 2012; pp. 1–766, ISBN 978-0-19-958805-3.
56. Palinkas, L.A.; Horwitz, S.M.; Green, C.A.; Wisdom, J.P.; Duan, N.; Hoagwood, K. Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Adm. Policy Ment. Health Ment. Health Serv. Res.* **2015**, *42*, 533–544. [CrossRef]

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.