

## Article

# Resolving Conservation Conflicts through Shared Vision, Collective Benefits and Relevant Values

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**Abstract:** The global challenges of biodiversity loss and persistent poverty and inequality, which interact and shape each other at the local scale, require new strategies to improve human well-being and conserve biodiversity. In South Africa, inclusive and transformative conservation approaches are gaining support, which is of particular importance given the challenging history of conservation during the colonial and apartheid eras. The Dinokeng Game Reserve was created to conserve biodiversity and combat poverty in adjacent communities. However, human–elephant conflict and community development challenges have led to unproductive conservation trade-offs. We developed a Theory of Change for Living in Harmony that can help policymakers, conservation organisations and local communities to find better solutions. To develop the Theory of Change, we assessed the visions and perspectives towards (elephant) conservation and socio-economic development among both people living inside (owners/direct beneficiaries) and outside (community/indirect beneficiaries) the reserve. The study revealed common ground among stakeholder groups in ranking elephant benefits, as well as a collective acknowledgement of the importance of moral values in conservation decision making. However, the benefits of living within or adjacent to an elephant reserve differed considerably across stakeholder groups. Accordingly, different but not mutually exclusive solutions were suggested, including investments in multi-level good governance, education and capacity building, active community engagement and development, reserve expansion, and promoting the reserve’s integrated conservation model. This Theory of Change aims to support common ground between stakeholders, with critical feedback loops that reduce barriers and enable conditions for coexistence. It promotes conservation strategies that are socially relevant and widely supported, can create mutually beneficial outcomes for elephants, biodiversity, and multiple stakeholders, and can be applied to other species or ecosystems in general, with specific elements being tailored to those circumstances.

**Keywords:** conservation; ecosystem services; elephants; human–elephant coexistence; living in harmony; moral values; pluralism; theory of change; trade-offs; land use planning



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## 1. Introduction

Globally, scientists agree that to reverse the decline in biodiversity and mitigate and adapt to climate change, more land must be protected or managed for conservation purposes [1]. The High Ambition Coalition for Nature and People, which over 100 governments from across six continents have committed to, and the Kunming–Montreal Global Biodiversity Framework that was adopted at the 2022 Conference of the Parties to the UN Convention on Biological Diversity aim to protect and conserve at least 30% of the world’s land area by 2030 [2]. In the developing world, biodiversity-rich land exceeds the global average. However, biodiversity faces multiple threats, including but not limited to poverty, inequality, resource extraction and encroachment. Additionally, the land often becomes a point of contention due to exclusionary conservation approaches, unequal power relations, and inequality [3,4]. Persistent poverty, inequality, and marginalisation demand socio-economic development and equity in sharing natural resources [5]. These simultaneous challenges result in polarised conservation debates and trade-offs between biodiversity conservation and human well-being in which one element loses out or neither are achieved effectively.

South Africa is considered one of the most biodiversity-rich, but also one of the most socio-economically unequal, countries [6–9]. Over half of the country’s population lives in poverty, with 55.5% earning less than USD 83 per month [10]. Ecosystem services play a crucial role in supporting people’s well-being, livelihoods and health, including access to basic provisioning services and the use of traditional medicinal plants, which serve as the primary source of healthcare for over 70% of the population [6]. Conservation approaches in South Africa tend to focus on maintaining ecological processes, managing wildlife, and developing economic opportunities within and for the reserves (e.g., tourism, hunting) [11]. However, they often fall short in adequately addressing socio-economic issues beyond the reserve borders (e.g., low-quality or temporary jobs, poor labour conditions, and lack of access to resources and land), sometimes even exacerbating the problems because local people are denied access to natural resources previously at their disposal [12–14]. The interaction between poverty, inequality and the dependence on natural resources, due to limited alternative opportunities, generates feedback loops that jeopardise socio-ecological sustainability and resilience, particularly where conservation authorities and communities are in conflict over resource access and control [14–17]. Given the legacy of apartheid and colonialism, South African biodiversity conservation is challenged by complex historical injustices, unequal power relations, a lack of participation in decision making, and polarised conservation debates [18]. An integral part of overcoming these challenges is identifying and strengthening commonalities between stakeholder groups that have historically been divided, and incorporating the perceptions, values, and needs of local people into conservation planning [19–21]. Resolving these conflicts necessitates a comprehensive understanding and consideration of the differential socio-economic and political factors and aspirations that shape different actors’ interest in conservation [19,22,23]. However, transformative frameworks that guide transitions away from deeply rooted systems of inequity to new governance systems are currently lacking [24]. To address this gap, the current study aims to develop a Theory of Change (ToC) to serve as a unifying, pluralist framework by outlining the necessary interventions to reach mutually desired outcomes. By fostering a shared vision that integrates multiple perspectives, the ToC facilitates collaboration among diverse stakeholders, ensuring inclusivity in the planning and implementation processes. This enables a more holistic understanding of the current state of affairs and provides a road map for collectively achieving the desired state through supported solutions. Adopting a pluralist approach that highlights commonalities rather than differences is key to developing conservation policies that are socially relevant, supported, and beneficial to a diverse range of stakeholders [22]. This perspective aligns with the recently published *White Paper on the Conservation and Sustainable Use of South Africa’s Biodiversity* (Government Gazette, 14 June 2023, No. 48785, 1–43) which emphasises the need for an African conservation approach that aims to conserve and sustain biodiversity, while ensuring access and benefits

for local people. The approach embraces the values of diversity, indigenous knowledge, and moral principles such as those encapsulated in the African philosophy of Ubuntu.

The Dinokeng Game Reserve, and in particular the African savanna elephant (*Loxodonta africana*) living in this reserve, offers a compelling case study to identify and evaluate lessons learned from initiatives that aim to integrate conservation and human development goals in South Africa. Established in 2011, the Dinokeng Game Reserve transformed previously low-value agricultural and state-owned land near Tshwane and Johannesburg into a residential Big Five game reserve. A key founding principle was the establishment of a public–private partnership involving local/provincial authorities, land/business owners, and historically marginalised communities [25]. The Gauteng province aimed to boost socio-economic development and address high unemployment rates in the surrounding communities by creating a premier tourism destination, including a unique “All Africa in one-day” program that links nature and culture [25,26]. The conceptual planning of the Dinokeng Game Reserve included various nodes surrounding the reserve offering cultural experiences such as African craft, traditional farming and medicine, African music, dance, and adornment [26]. Since its inception, the reserve has generated over 800 direct permanent jobs for residents in neighbouring communities [26], along with an additional 1242 indirect jobs in related industries such as craft sales [27]. The reserve has effectively expanded nature conservation land use by conserving, restoring, and rewilding 21000 ha of land [28]. However, despite the progress achieved to date, the reserve has not yet fully realised its potential due to conflicts and unproductive trade-offs between people and elephants (human–elephant conflicts—HECs), and conflicting perspectives among people who advocate protectionist approaches versus those pursuing access to conservation benefits for local people (human–human conflicts—HHCs) [29].

Later in the paper, in order to effectively address trade-offs, we categorise types of trade-offs based on principles with contrasting characteristics [30,31]. To provide a broader context, we highlight two broad areas of general conflicts, firstly HECs. Elephants provide socio-economic and cultural benefits, and are considered a part of the national heritage by most stakeholders [30,32–38]. Globally, people express concern for the conservation of elephants for both their intrinsic and instrumental value [32,39]. Over the past three decades, South Africa has (re)introduced approximately 800 African savanna elephants to small, privately owned reserves to manage population numbers in some areas and boost wildlife-based tourism in others [38,40–42]. The transition from agriculture to wildlife-based industries was driven by the higher income potential of wildlife-based tourism compared to farming where agriculture outputs were marginal, supported by changes in legislation allowing private ownership of wildlife [43,44]. However, failure to adequately meet the needs of elephants within these reserves has unintended negative consequences, particularly in areas with high human disturbances [45,46]. In the Dinokeng Game Reserve, ten elephants (a herd of nine elephants and a young bull) were introduced in 2011, three additional adult bulls in 2013, and a breeding herd of eleven elephants in 2019, enhancing the reserve’s appeal as a wildlife destination and attracting tourists [28]. In comparison to other reserves, the Dinokeng Game Reserve has a high-density human population comprised of 57 lodging properties with a total bed capacity of 3000 for accommodating tourists and 176 landowners. It also has a vehicle density of 5.89 vehicles per 1000 ha [26,27], a large number of internal fences, as well as self-drive and off-road driving routes. These factors contribute to high levels of human disturbances and stress on elephants, especially in the absence of refuge areas and clear elephant viewing guidelines [47–49]. Since their introduction, elephants in the Dinokeng Game Reserve have been involved in HEC incidents, including property damage and the loss of human and elephant lives. These conflicts, along with the subsequent elephant management interventions (including lethal control in one instance) have led to negative media coverage, reputational damage, and division among the reserve’s landowners, management, and other stakeholders (e.g., NGO partners, researchers, or investors). While some incidents involved elephants breaking out of the

reserve, the majority of HEC incidents occurred internally, rather than externally, due to the presence of robust external fences.

The second area of conflict is HHCs and is related to reserve–community relations. In South Africa, the relationship between people and parks has been fraught with socio-economic and political tension from the start [13]. Despite the institution of legal agreements in 2006, designed to foster benefit-sharing with adjacent communities, the socio-economic and psychological inequities rooted in historical injustices are not easily overcome. The region surrounding the Dinokeng Game Reserve comprises some of the most economically disadvantaged areas of the province, including Kekana Gardens, which has one of the highest poverty indices in Gauteng province (67.0% of the community is considered poor) [50]. Community members in these areas have expressed concerns about their loss of access to the reserve terrain, which they historically used to gather natural resources for religious and cultural purposes [27]. This loss of access has led to feelings of exclusion and mistrust [51,52], which fuelled incidences of social unrest and localised crime (e.g., break-ins, vandalism, sabotaged fences, setting of bushfires, poaching, and trespassing) [51,53–55]. Several factors contribute to the complexity of the socio-economic trade-offs faced by the reserve, including the high population density in the surrounding communities, high rates of inequality and poverty, changes in land use, and the multiplicity of stakeholders involved, each with different interests, needs, and expectations regarding the (economic) benefits associated with elephants and the reserve. When faced with conservation trade-offs, understanding the underlying principles is crucial. With respect to these principles, a useful distinction has been made by Schwartz (2021). For instance, an approach that endorses the exploitation of nature for economic benefits aligns with secular principles, whereas the stance that emphasises the intrinsic value of and respect for nature is rooted in sacred principles [31]. Sacred principles such as human rights, justice, freedom, human life, and identity are viewed as transcendental, meaning that any infringement upon them is unthinkable and cannot be compensated [31]. In contrast, secular principles like cost-effectiveness or instrumental values can be compromised or traded off, as they allow for compensation in case of loss [31,56].

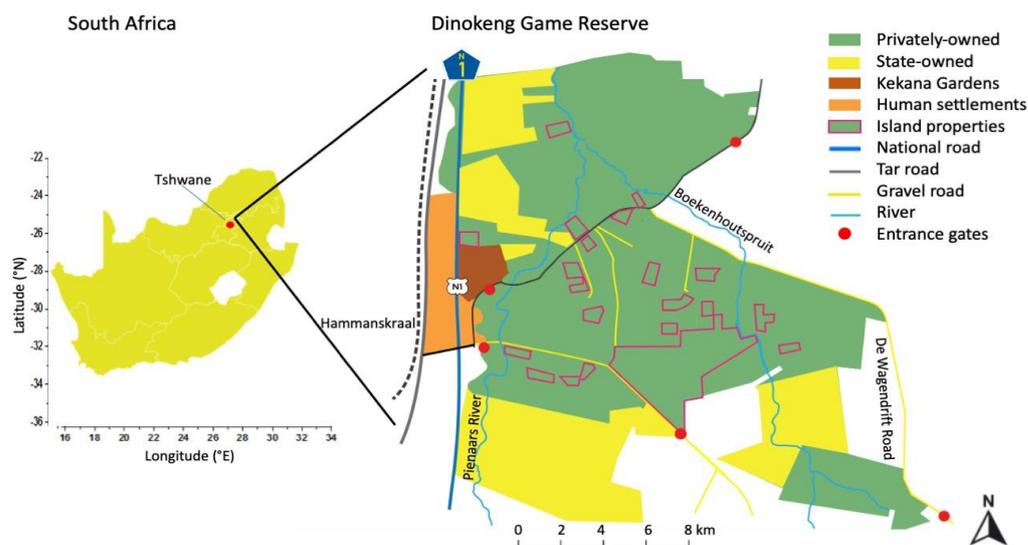
We aim to enhance knowledge of both local expectations and relations different stakeholder groups maintain with nature, and to use this understanding to develop a context-specific ToC that can also be generalised to enable a much-needed transition towards a more inclusive and integrative approach to conservation. Our study focuses on the Dinokeng Game Reserve, using it as a case study to investigate: (1) the various values associated with (elephant) conservation, as perceived and held by both residents within the reserve (owners/direct beneficiaries), and the Kekana Gardens community outside the reserve (indirect beneficiaries); (2) the trade-offs presently involved in decision making regarding elephant management and socio-economic community development; and (3) potential solutions to achieve a shared vision for the future that promotes socio-ecological sustainability. We developed a unifying, pluralistic “Living in Harmony” ToC aimed at fostering human–elephant coexistence and building common ground. The ToC aids in improving relations across different stakeholder groups and enables connections between the current state, the desired state, and the interventions needed to achieve the desired state, based on a recognition of all relevant values and a shared vision for the future. The ToC was designed as an iterative, pluralist framework that can adapt to various localized contexts, aiming to enable management strategies that acknowledge and value the rich range of coexistence experiences [57].

## 2. The History and Geography of the Dinokeng Game Reserve

### 2.1. Kekana Gardens

The Dinokeng Game Reserve (21,000 ha, 25.4010° S, 28.3071° E) is located on the north-eastern periphery of South Africa’s densely populated Gauteng province (Figure 1), a province characterised by high urbanisation, inequality, and unemployment [58]. One of the communities closest to the reserve, Kekana Gardens (with a land area of 2.61 km<sup>2</sup>

and a population of 15,709 individuals) [59], faces numerous socio-economic challenges (“Kekana Gardens” in Figure 1) [52]. Kekana Gardens, located within the Hammanskraal region, originated as an informal settlement in the 1990s when migrants began moving to the area, and was subsequently formalised [18]. The management of the area follows a block system, with each of the 28 blocks having an elected block chairperson, with an All-Blocks Chairperson to oversee and coordinate the entire block structure [18]. Community members elect chairpersons every five years. The settlement falls under the authority of the AmaNdebele-a-Moletlane tribe, with a Chief as its political head. After a chieftaincy dispute and shifting power dynamics, descendants of the Hammanskraal chieftaincy moved to Kekana Gardens and established the AmaNdebele-a-Moletlane Tribal Authority of Kekana Gardens. The authority is not officially recognised within the formal structures of traditional authorities under the Traditional Leadership and Governance Framework Act 42 of 2003 (Amended Act 23 of 2009) [60]. The recognised Chief of the tribal authority in Hammanskraal holds a legal mandate for community development and restitution, while the unrecognised leadership of Kekana Gardens lacks this institutionalised power. To date, unresolved land claims persist between both traditional authorities, including disputes over land bordering the Dinokeng Game Reserve [18]. In 2014, Kekana Gardens filed a land claim against the reserve, but were unsuccessful as community members did not possess the title deeds for the property within the reserve. It is worth noting that prior to 1990, there was no community where Kekana Gardens is now located; therefore, connection to the land in the Dinokeng Game Reserve is relatively new [61].



**Figure 1.** Map of South Africa (left) indicating the location of Dinokeng Game Reserve, north of the city Tshwane in Gauteng province (left). Dinokeng Game Reserve consists of privately owned land (green), state-owned land (yellow), and private properties that are fenced out (pink borders) and are not part of the reserve. Human settlements adjacent to the reserve are indicated in orange, with Kekana Gardens in dark orange. The entrance gates (red dots) regulate public access to the fenced reserve. A national freeway (N1 in blue) runs along the western border of the reserve, and a public tar road (black) cuts through the reserve (design: Van de Water, adjusted from [26,27] with input from Campher-Schwarz, 2023).

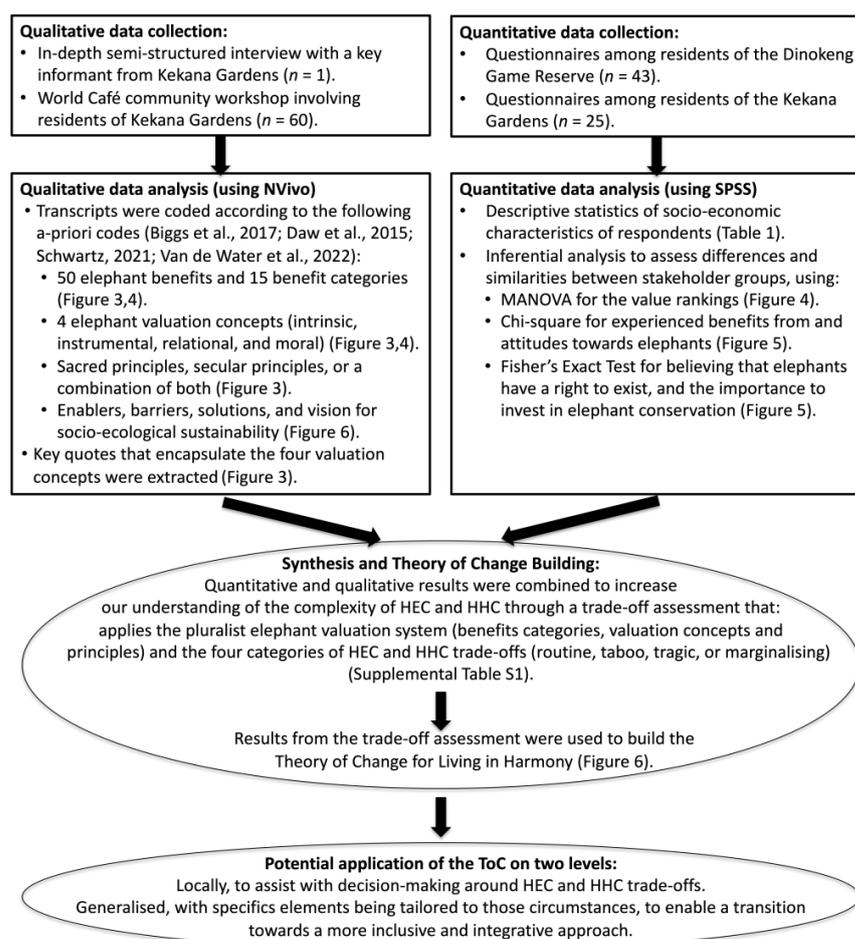
## 2.2. The Dinokeng Game Reserve

The Dinokeng Game Reserve operates as a public–private partnership, with shares divided among 176 landowners and the Gauteng Department of Economic Development [27]. It was officially opened in 2011 and is managed by elected landowners [26–28]. In 2018, private landowners owned approximately 77% of the reserve, while the remaining 23% was state-owned, mainly administered by the Gauteng Provincial Government (4200 ha) and by the South African National Defence Force (3000 ha) (“State-owned” in Figure 1). The

reserve encompasses previously degraded agricultural land and state-owned land that has been transformed into diverse ecosystems, including savanna, grassland, riverine terrain, and wetlands. These habitats provide crucial habitat to wildlife, including the iconic Big Five species: lion (*Panthera leo*), leopard (*Panthera pardus*), black rhinoceros (*Diceros bicornis*), the African buffalo (*Syncerus caffer*), and the African savanna elephant. Additionally, the Dinokeng Game Reserve incorporates areas designated for agriculture, residential purposes (with 176 landowners, most of whom have fences around their houses), and commercial establishments (e.g., lodges, restaurants, shops, and a brewery), as well as social service establishments including schools and orphanages. There were eighteen landowners within the reserve boundaries who, for various reasons, chose not to join the reserve. These properties are fenced out and isolated from the rest of the reserve by elephant-proof fences (referred to as “Island properties” in Figure 1), and they serve different purposes such as farming (cattle, pigs, game breeding, lucern, pecan, and macadamia nuts) (“Island properties” in Figure 1).

### 3. Methodology

The research design featured independent data collection and analyses using mixed methods, where both qualitative and quantitative results were treated with equal importance and combined to foster comparison, integration and connecting all key findings (Figure 2). Consequently, the results were used to build the ToC, serving as a comprehensive outcome that encapsulates the critical elements uncovered during this study [62].



**Figure 2.** Conceptual framework for the mixed methods study approach, illustrating the connections between different components, their methods, and the logical progression of the study elements (adapted from ref [62]. Copyright: 2016, Abdul-Razzak). [22,30,31,63].

### 3.1. Data Collection

The first author lived at the Dinokeng Game Reserve from January 2018 to August 2019, in order to be able on one hand to explore concepts like the “value of elephants” and provide context for the questionnaires, while also obtaining “hard” data to enable analysis of differences between stakeholders. The first author’s lived experience played a crucial role in developing a nuanced understanding of the landscape, in the identification of the two stakeholder groups, and aided in generating questions for the interview and questionnaires. Qualitative research methods were employed to delve into the study’s concepts, facilitating a deeper understanding and providing a context for the quantitative findings. We used the following methods: (1) a semi-structured in-depth interview with a key informant from Kekana Gardens, which aimed to provide crucial insights and contextual understanding; (2) a World Café community workshop involving residents of Kekana Gardens to obtain in-depth insight into the nature and diversity of values, perceptions, and visions that are difficult to capture using quantitative designs [64]. Questionnaires administered to (3) residents of the Dinokeng Game Reserve and (4) the Kekana Gardens community were conducted to be able to assess, rank and evaluate differences between stakeholder groups regarding the valuation of elephants, experienced benefits, attitudes towards and support for conservation.

Semi-structured in-depth interview with a key informant [65]. This method was employed to explore the community’s values, attitudes, needs, and experiences. This approach was particularly beneficial for providing depth, precision, and nuance to the concepts under investigation—qualities that could not be adequately captured through questionnaires alone. The exploratory nature of the interview was designed to encourage the participant to freely express their thoughts, potentially unveiling unexpected insights or new avenues for inquiry. Topics strategically chosen for discussion included: (1) community attitudes and values towards elephants and the Dinokeng Game Reserve; (2) barriers to and enablers of establishing positive reserve–community relations; and (3) potential solutions to improve reserve–community relations and promote socio-ecological sustainability. The interview guide, crafted by the first author, simply served as a checklist to ensure that the key topics were discussed, and was designed with enough flexibility to allow participants to introduce or elaborate on topics that might have initially been overlooked [65]. The interview lasted approximately two hours.

Community workshop. In August 2019, a participatory World Café community workshop was organised to allow for a collective dialogue among community members, enabling us to capture the diversity of perspectives and experiences. The workshop was facilitated by a community leader and the first author at one of the lodges within the reserve. A total of 60 Kekana Gardens community residents attended the workshop. The workshop followed the methodology of a World Café [64], which is an inclusive and open process of information gathering. The workshop focused on three themes: (1) the value of elephants; (2) participants’ vision of the future; and (3) the action needed to achieve positive change. The lodge created a welcoming and comfortable environment to foster open discussions. However, recognising its influential position within the reserve in relation to those living in poverty outside and acknowledging its resulting non-neutral nature, we must take into account the possibility that this may have shaped community members’ responses, possibly inclining them towards socially desirable answers, despite the presence of expressed criticism. The community leader welcomed the participants in both English and Setswana languages and provided an introduction to the study. The first author explained the workshop’s objectives and methodology. Prior to the World Café beginning, participants were given 45 min to complete the Kekana Gardens questionnaire. Following the questionnaire administration, the participants were divided into three subgroups, with each group assigned to address one of the three themes. Three external volunteers served as “theme hosts”, and three community members volunteered as “theme leaders” to assist with translation and ensure that each participant understood the process and felt comfortable contributing to the discussions. The theme hosts introduced the questions

written on posters in English (in retrospect, as a standard practice, the posters should have been written in English and Setswana), offering translations as necessary, and initiated the discussion on each theme. Participants received pens and sticky notes to contribute their ideas to the posters, using their preferred language. The theme hosts facilitated the translation of input, if needed, the groups discussed the input and organised ideas into emerging categories. The groups then rotated, allowing each group to contribute to each theme and enabling participants to learn from the previous group's input on that particular theme. Following the group discussions, the theme leaders facilitated a plenary session where they presented the findings and input from each theme to the entire group. The aim was to summarise the outcomes and enhance clarity. The workshop concluded by highlighting the main insights and takeaways derived from the discussions.

**Questionnaires.** This method was selected to provide a quantitative measure of attitudes and experiences among both stakeholder groups that allows for statistical analyses to identify patterns and trends. The questions were crafted based on our previous research on the drivers of HEC [66], the literature on the value of elephants [32,33], and the first author's lived experience in the reserve that shaped the focus of this study. The co-authors reviewed and provided feedback on the questionnaire, which was then piloted with a select group of residents to verify its clarity and to estimate the time required for completion. The first questionnaire targeted the 176 landowners of the Dinokeng Game Reserve ("Dinokeng questionnaire", hereafter), and was administered between April and August 2019. The reserve management introduced the study to the residents, who could be homeowners or commercial property owners, and distributed the online questionnaire through email and WhatsApp. A reminder message was sent two weeks later. A quarter ( $n = 43$ , 24.4%) of Dinokeng Game Reserve landowners completed the questionnaire. The second questionnaire targeted residents of the Kekana Gardens community and was administered to a convenience sample of 60 residents who had chosen to attend the World Café community workshop in August 2019 ("Kekana Gardens questionnaire", hereafter). A community leader of the Kekana Gardens community (i.e., the key informant for the semi-structured interview) invited respondents to the study, specifically targeting (potential) local leaders, which may have introduced some bias as people who are more outspoken, higher educated, or younger may have been more likely to attend the workshop. Of the 60 administered questionnaires,  $n = 25$  were excluded from analyses due to incomplete responses and missing data. Hence, the final sample consisted of 35 Kekana Garden respondents (58.3%). Both questionnaires were divided into four sections focusing on (1) people's valuation of and attitudes towards elephants; (2) barriers to, and enablers of, socio-ecological sustainability; (3) people's vision of the future; and (4) demographic variables to gain insight into the socio-economic factors that influence people's perceptions and attitudes. The questionnaires included both open and closed questions. To gain a better understanding of the context of each stakeholder group, each questionnaire included several stakeholder-specific questions (e.g., the Dinokeng Game Reserve questionnaire included a question about people's willingness to pay for elephant conservation, and the Kekana Garden questionnaire questions about the cultural importance of elephants and cultural values regarding elephants). The Dinokeng Game Reserve questionnaire comprised 41 questions (Section S1), and the Kekana Gardens questionnaire contained 35 questions (Section S2). Both questionnaires were completed anonymously with informed consent.

### 3.2. Data Analysis

As a first step in the analytical procedure, a comprehensive review was conducted of all the transcribed qualitative data gathered through the semi-structured interview, open-ended questions in the questionnaires (i.e., the first question in the questionnaire, before the ranking of values), and input from the World Café workshop, to gain a preliminary, broad understanding of the data. Second, data were organised using a priori codes sourced from the literature and independent of engaging with the data [67], using codes based on the pluralistic elephant valuation system [30]. During the first round of coding, we assigned 50

different codes to statements expressed by the respondents about the benefits of elephants, based on the 90 elephant benefit labels we identified in previous research [30]. These 50 benefits were grouped under 15 value categories. We further sorted data on the value of elephants and people's vision for elephants, the reserve, and their community based on the nature of the values involved, identifying them as either intrinsic, instrumental, relational, or moral, following [30], and coded them as such [31,63]. Data related to the nature of conservation trade-offs (i.e., giving up on something to experience the benefits of something else [68]) were further labelled as predominantly sacred principles, predominantly secular principles, or a combination of both, based on the distinction made by [31,63]. Statements related to the ToC elements were coded based on theory from prior studies [69], providing input from both stakeholder groups on the four main ToC elements: enablers, barriers, solutions, and vision. The coding process, which involved several rounds, was conducted by the first author in NVivo software (NVivo 12 Pro, QSR International Pty Ltd., Victoria, Australia). The co-authors reviewed and agreed with the assignment of codes. After closely examining the statements, key quotes from both stakeholder groups that encapsulate the four valuation concepts were extracted to support analysis [70]. The quantitative data from the two questionnaires were merged and analysed in SPSS (SPSS 27, SPSS, Inc., Chicago, IL, USA). Both qualitative and quantitative data were used in the trade-off analysis of HEC and HHC decisions to identify current barriers and enablers of coexistence between elephants and humans, the desired state or vision for the future, and solutions to realise the vision (Section S3). Iterative discussions were conducted among co-authors to interpret the data and identify emerging themes for inclusion in the ToC.

### 3.2.1. The Value of Elephants

To comprehensively assess the value that elephants have for the different stakeholders involved, triangulation was used to account for differential underlying perceptions or valuation processes (e.g., more conscious vs. more unconscious) and gain insight into values otherwise missed. Specifically, the value of elephants was assessed in three ways: (1) open-ended questions about the perceived value of elephants; (2) ranking of elephant values; and (3) experienced benefits, attitudes, and support for conservation. The questions about the perceived value of elephants that were asked in the questionnaire were: "Are you aware of any benefits that elephants may bring to the people of South Africa?"; "What change is needed for the reserves to contribute more to social development? In other words, what would enable more benefits of the reserve to flow to your family or community?"; and "How would you like to see the future of elephants in South Africa?". At the community workshop, the poster that asked for participants' input on the value of elephants for society was divided into four sections: Economic values; Cultural, spiritual and existence values; Community development and education; and Environment and ecological, which were the main categories that were identified through the first questionnaire. To guide interpretation, the values were classified into benefit categories and valuation concepts identified in the recently developed pluralist elephant valuation approach [30]. For the ranking of various values of elephants, respondents were asked to rate the importance of 16 different values attributed to elephants on a scale from 1 (not important) to 5 (very important). A multivariate analysis of variance (MANOVA) was conducted to compare the pattern of value rankings between both stakeholder groups. To gain insight into the perceived value of elephants, chi-square tests were used to examine differences in experienced benefits from elephants and attitudes towards elephants, and Fisher's exact test to assess differences between both subgroups in believing that elephants have a right to exist, and that it is important to invest in elephant conservation.

### 3.2.2. Trade-Offs Related to HEC and HHC Decisions

Conservation trade-offs are often the result of decisions taken one-sidedly, and underlie many of the conflicts between people and conservation reserves. Therefore, effectively identifying and addressing these trade-offs are crucial and calls for balanced solutions

and/or compromises that can foster unity [30]. The conservation trade-offs related to HECs and HHCs were examined by considering the secular and sacred principles involved in these trade-offs [30]. By carrying this out, we identified the kinds of trade-offs that emerge when these divergent principles clash, underscoring the necessity of integrating human dimensions into conservation strategies [71]. Each trade-off related to HECs and HHCs encountered was classified as a routine, taboo, tragic [31], or marginalising trade-off [30]. Routine trade-offs occur when secular principles conflict with other secular principles, and rational outcomes can be calculated for these conflicts. Taboo trade-offs arise when secular principles are countered by sacred principles, often resulting in public outcry and controversy. Tragic trade-offs occur when decisions involve conflicting sacred principles, leading to emotional and stressful dilemmas. Marginalising trade-offs emerge when secular principles take precedence in trade-offs, overpowering the sacred principles of marginalised or disempowered groups [30]. In such cases, power dynamics often play a role, disadvantaging those whose knowledge or perspectives may not align with Western approaches or educational levels. Qualitative data were used to identify the types of trade-offs related to HECs and HHCs that occurred in the Dinokeng Game Reserve, as well as potential solutions to reduce barriers and promote enablers of human–elephant coexistence and enlarge common ground, which were used as input for developing a ToC (Section S3).

### 3.3. *Developing a Theory of Change*

A ToC serves as a strategic planning framework that provides a comprehensive description of how desired change is expected to occur, particularly in complex systems that require flexibility [72]. It establishes the connections between the current state, the desired state, and the interventions needed to achieve the desired state, which aligns with a shared vision for the future or long-term goals [73]. In the context of this study, incorporating input from both stakeholder groups and analysing their differences and commonalities, the authors developed a ToC as an outcome, rather than as a method for testing desired outcomes, to guide decision making regarding potentially antagonising conservation issues. The ToC developed in and with data from this study identifies logical pathways that foster experiences of coexistence and integrates [57] (1) the current barriers and enablers of coexistence between elephants and humans; (2) the desired state or vision for the future, as expressed by the stakeholders; (3) integrated solutions by using a unifying, pluralistic approach (i.e., identifying solutions that promote the unifying aspects, but also unify the polarising aspects); and (4) feedback loops for removing barriers to and reinforcing enablers of socio-ecological sustainability.

### 3.4. *Risk of Potential Biases*

It is crucial to acknowledge the potential for inherent biases that could shape the findings of this study. All authors are scientists specialising in nature conservation, social and environmental systems integration, and sustainable development. As such, they have an interest in objective data gathering and analysis, as well as in their use to enhance conservation practices—which we regard as complementary and mutually beneficial activities. Our use of the term “trade-off” might clarify this: we describe a conservation intervention, for example, fencing off land to protect wildlife, and also its consequence: the exclusion of local people that previously benefited from that land. Such exclusion can exacerbate poverty and inequality, thereby inciting hostility against the reserve and resulting in adverse outcomes for all parties involved. As both scientists and conservationists, our ultimate objective is to strive for solutions that are socially and environmentally just, recognising that participatory and carefully constructed governance processes are needed to ensure the addressing of power imbalances and to ensure deliberation and dialogue around the trade-offs to be made. To that end, we aim to identify and comprehend the diverse interests and values at stake. Furthermore, the first author’s positionality is as a researcher from the Global North who has not personally experienced the struggles experienced in marginalised communities nor in managing a reserve. Her own experiences and perspectives could have

introduced bias in how data were interpreted, the questions that were asked, and how study participants responded during the interview and workshop. Strategies to mitigate potential bias included the use of open-ended questions and involving community leaders in leading the community workshop and discussions.

## 4. Results

### 4.1. Socio-Economic Profile of the Respondents

Table 1 presents the socio-economic characteristics of residents in the Dinokeng Game Reserve and the Kekana Gardens community. It is important to take into account the historical context, namely that the Kekana Gardens community was established after 1990 during the transition to a democratic South Africa, while the Dinokeng Game Reserve was established in 2011 [61]. Therefore, all respondents faced relatively new local socio-economic challenges and opportunities. When comparing the socio-economic profiles, Kekana Garden respondents were younger, had lower levels of education, and experienced higher levels of unemployment compared to the Dinokeng Game Reserve respondents. The majority of the Dinokeng Game Reserve respondents spoke Afrikaans or English, while the Kekana Garden respondents mainly spoke Sepedi or Setswana. The majority of the Dinokeng Game Reserve respondents were business owners, and almost half of them (48.7%) stated that they generated some income related to the Dinokeng Game Reserve. The majority of Kekana residents (42.9%) stated they were unemployed.

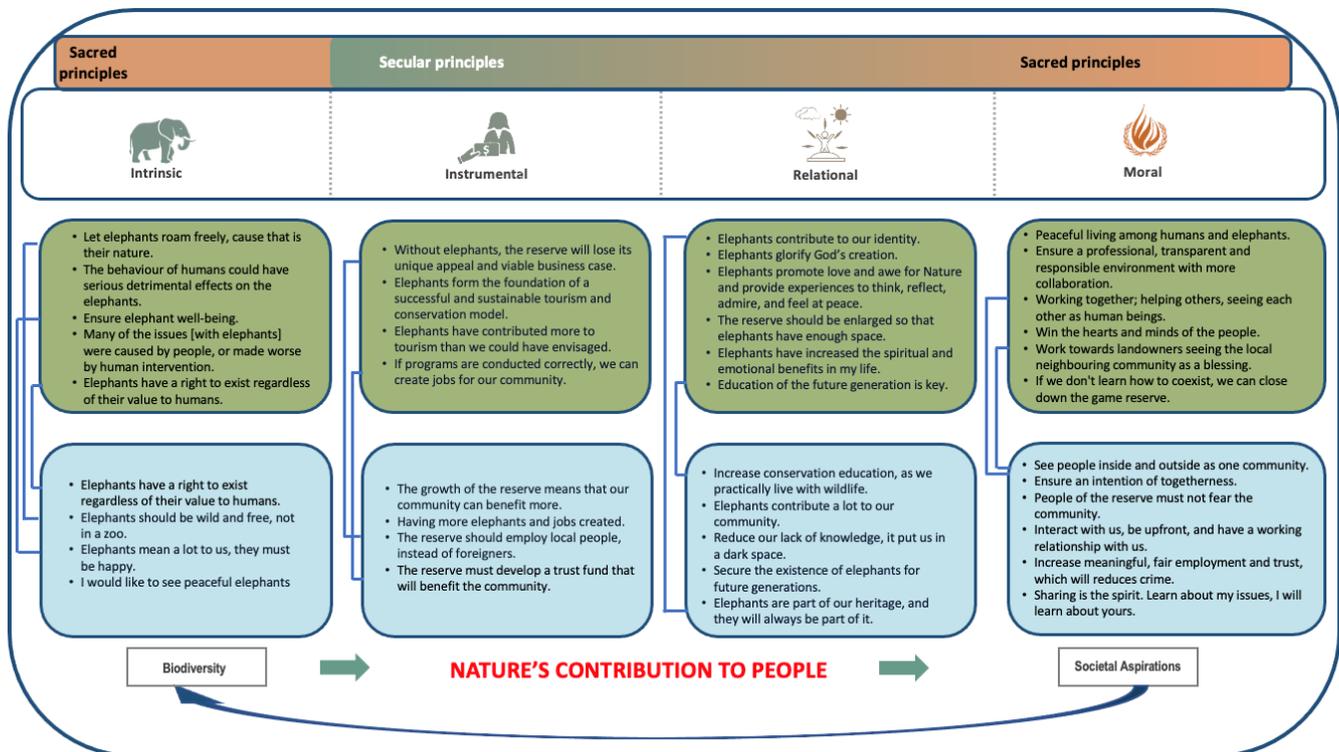
**Table 1.** Socio-economic characteristics of respondents from Dinokeng Game Reserve ( $n = 43$ ) and Kekana Gardens community ( $n = 35$ ). The percentages may not sum to 100% due to missing values.

Characteristics	Residents of Dinokeng Game Reserve (%)	Residents of Kekana Gardens (%)
Gender		
Male	51.2	45.7
Female	41.9	45.7
Age		
19–40	25.6	25.7
41–60	32.6	51.4
>61	32.6	2.9
Native language		
Afrikaans	46.5	
English	39.5	
Sepedi		31.4
Sesotho		14.3
Setswana		28.6
Other	7.0	22.8
Highest education level		
No formal/primary education		8.6
Secondary education	25.6	51.4
Tertiary education	67.4	20.0
Employment		
Business owner	44.2	8.6
Government, teacher, medical, management	11.6	14.3
General labour	4.7	11.4
Reserve management, conservation	4.7	
Other	14.1	22.9
Unemployed	10.0	42.9
Has visited the reserve	100	71.4
Lived in the area before the reserve was opened as a Big Five game reserve in 2011	53.3	84.4

## 4.2. The Value of Elephants

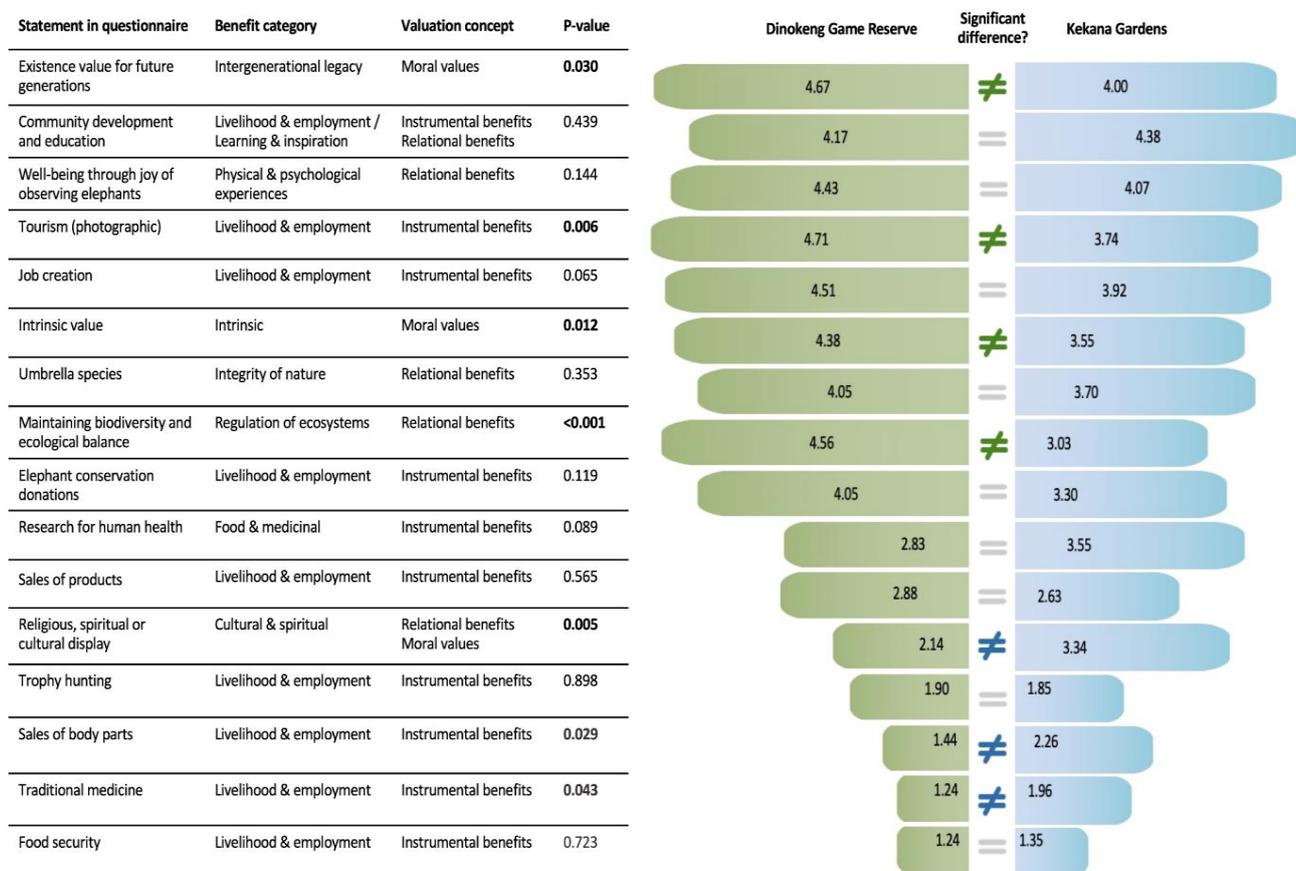
### 4.2.1. Perceived Values of Elephants

Figure 3 provides a comprehensive overview that aims to discern, weigh, categorise and connect select statements obtained from the workshop and the open-ended questions in the questionnaires. The first question in the questionnaire was an open question asking respondents to list the values elephants bring to the people of South Africa. The Dinokeng Game Reserve respondents primarily mentioned instrumental benefits, such as ecotourism (100.0%) and job creation (44.4%), followed by relational benefits, such as conservation value as an umbrella species (27.8%), education (16.7%), and connection to nature (13.9%). Kekana Garden respondents, like the Dinokeng Game Reserve respondents, most frequently mentioned instrumental benefits (i.e., ecotourism, 57.1%; job creation, 50.0%; business development related to tourism, 35.7%) and relational benefits (community education, 50.0%; cultural value, 28.6%). During the Kekana Gardens community workshop, a wide range of benefits of elephants were discussed. This included instrumental benefits (job creation, business development, and medicinal use), social benefits (support for community-based projects, educational programs, reserve visits, skills development, and research), ecological benefits (ecosystem engineers), cultural benefits (totem animals, family’s beliefs, and sense of place), and the intrinsic value of elephants (rights of nature, animal well-being). In Figure 3, each statement is classified as intrinsic, instrumental, relational, or moral. The overview also provides insights into the associated secular or sacred principles, offering a deeper understanding of the complexities involved in conservation decision making and the occurrence of trade-offs, which will be further discussed in the subsequent section (adapted from [30]).



**Figure 3.** An overview to discern, weigh, categorise, and connect select statements obtained from the workshop, where participants were specifically asked about the economic, cultural, spiritual, existence, and ecological values of elephants, and potential benefits related to community development and education, and from answers to questions in the questionnaires regarding the value of elephants,

people’s vision for elephants and the impact of the reserve on their community. The first author classified the statements made by Dinokeng Game Reserve respondents (in green) and Kekana Garden respondents (in blue) based on the interpreted intent, rather than this being carried out by the participants. The co-authors reviewed and agreed with the assignment of statements to value categories. The blue lines connecting values indicate areas of overlap, signifying common ground between the two groups. Incorporating moral values into (elephant) conservation strategies creates a feedback loop, connecting societal aspirations to biodiversity (bottom), fostering reciprocity with nature and promoting socio-ecological sustainability (modified from [30]). The statements under the four valuation concepts were further allocated to more specific benefit categories (see Figure 4). The overview aims to create a broader understanding of people’s values and aspirations regarding elephants and the reserve, identifying the key values at stake in conservation decisions.



**Figure 4.** An overview of the rankings of various elephant values, highlighting both shared perspectives and nuanced differences between the Dinokeng Game Reserve (green) and Kekana Gardens (blue) respondents. Respondents were asked to rate statements related to the importance of various services, benefits, and values of elephants, using a 5-point Likert scale ranging from 1 (Not important) to 5 (Very important). The statements were associated with benefit categories and valuation concepts [30] to provide a comprehensive understanding of the nature of the statements and their high-level representation (columns 2 and 3). The bolded p-values in column 4 signify significant differences in the rankings assigned to values by the two stakeholder groups, with a significance level of  $p < 0.05$ . The average perceived importance assigned to each benefit is indicated by the numbers within the bars in the figure. The items are ranked from highest to lowest based on the overall mean score. The signs between the bars indicate significant differences, using MANOVA, in the importance attributed to individual values between the subgroups. Grey equal (=) signs indicating no significant difference, the green not equal (≠) signs indicating significantly more importance given by Dinokeng Game Reserve respondents, and the blue not equal (≠) signs indicating significantly more importance given by Kekana Gardens respondents for that particular item.

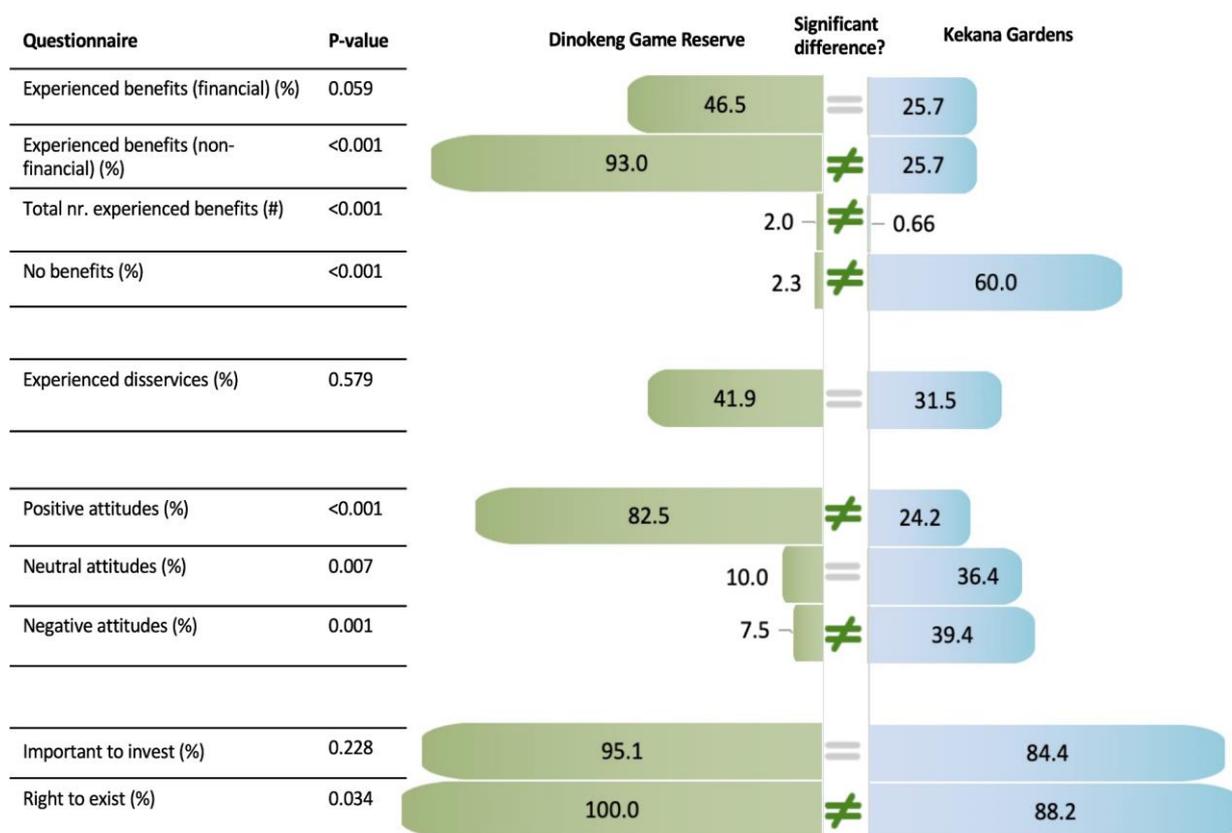
#### 4.2.2. Ranking Various Values of Elephants

Figure 4 illustrates the rankings of various values of elephants as assessed by respondents from the Dinokeng Game Reserve (in green) and Kekana Gardens (in blue). The rankings provide insights into the shared perspectives and common ground between the two respondent groups, with both respondent groups assigning high scores to values such as the existence value of elephants for future generations, the potential for community development and education, the sense of well-being experienced through the joy of observing elephants, and the benefits from ecotourism. Among the Dinokeng Game Reserve respondents, ecotourism received the highest ranking. On the other hand, Kekana Gardens respondents ranked community development as the highest value. Both subgroups placed the instrumental values of elephants at the forefront. In the case of the Dinokeng group, this pertained to individual income, while for the Kekana group, it related to the community. Both stakeholder groups assigned the lowest rankings to the consumptive instrumental benefits of elephants, including trophy hunting, sales of body parts (ivory, hides, and meat), and meat consumption. These values received average scores below 2, indicating a shared perspective that these practices hold limited importance among these stakeholder groups. In terms of differences between the groups, the Dinokeng Game Reserve respondents assigned significantly higher importance to the intergenerational legacy of elephants (the sense of well-being derived from knowing that elephants may exist for future generations), ecotourism, intrinsic value, and the role of elephants in maintaining ecological balance. Compared to the Dinokeng Game Reserve respondents, Kekana Gardens respondents, while generally assigning low scores, attributed higher importance to values associated with religious, spiritual, or cultural benefits of elephants, sales of body parts, and traditional medicine.

#### 4.3. Experienced Benefits, Attitudes, and Support for Conservation

Data collected through the questionnaire and World Café workshop were utilised to explore the attitudes towards, and benefits derived from, elephants among both stakeholder groups. The Dinokeng Game Reserve respondents reported a significantly higher frequency of gaining non-financial benefits from elephants compared to Kekana Gardens respondents (Figure 5). Moreover, the Dinokeng Game Reserve respondents experienced a greater number of benefits from elephants overall. These results are expected, considering that the Dinokeng Game Reserve respondents have unrestricted access to the reserve, more opportunities to observe elephants, and the ability to build livelihoods centred around wildlife. In contrast, the Kekana Gardens respondents do not have the same level of access and opportunities. Consequently, the percentage of respondents who reported no benefits from elephants differed significantly between the two groups, with only 2.3% of the Dinokeng Game Reserve respondents indicating no benefits, compared to 60.0% of Kekana Gardens respondents.

In terms of attitudes towards elephants, the Dinokeng Game Reserve respondents demonstrated significantly more positive attitudes (82.5%) compared to Kekana Gardens respondents (47.3%). The Dinokeng Game Reserve respondents primarily expressed feelings of admiration (28.7%), excitement (27.6%), awe (16.1%), and happiness (13.8%), whereas Kekana Gardens respondents reported a mixture of fear (29.1%), excitement (18.2%), and happiness (18.2%). Despite these differences in experienced benefits and attitudes, there was important common ground between both groups. Both the Dinokeng Game Reserve and Kekana Gardens respondents agreed on the importance of investing in elephant conservation, with 95.1% of the Dinokeng Game Reserve respondents and 84.4% of Kekana Gardens respondents expressing this viewpoint (the cultural value may have influenced this, as most Kekana Gardens respondents stated that elephants were important to their culture (72.7%)). Furthermore, all Dinokeng Game Reserve respondents (100.0%) and the majority of Kekana Gardens respondents (88.2%) believed that elephants have the right to exist irrespective of their value to humans.



**Figure 5.** Overview of the similarities and differences between the Dinokeng Game Reserve (green bars) and Kekana Gardens (blue bars) respondents. Chi-square tests were used to examine differences in experienced benefits from elephants and attitudes towards elephants, while Fisher’s exact tests were employed to assess differences between the subgroups in terms of their beliefs regarding the rights of elephants and the importance of investing in elephant conservation. The signs displayed in between the bars indicate whether there is a significant difference between both subgroups, with grey equal (=) signs indicating no significant difference and green or blue not equal (≠) signs indicating Dinokeng Game Reserve respondents or Kekana Gardens respondents, respectively, who were significantly more likely to report the benefit/attitude/support, at  $p < 0.05$ .

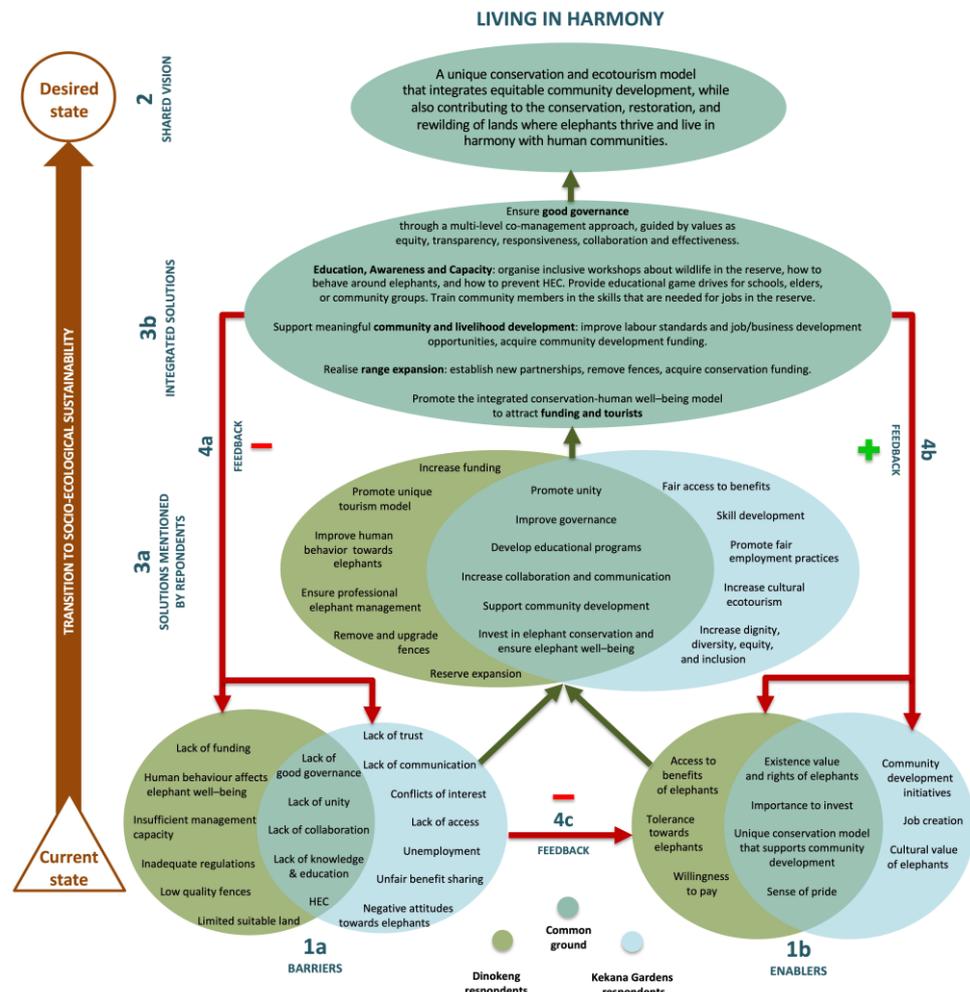
4.4. The Impact of Trade-Offs Related to HEC and HHC Decisions

The trade-offs related to HEC and HHC decisions in this study (in Supplemental Table S3, examples of trade-offs that occurred in the Dinokeng Game Reserve are specified, along with potential solutions and outcomes) are classified as routine trade-offs (two examples), taboo trade-offs (three examples), tragic trade-offs (two examples), and marginalising trade-offs (two examples) [31,56,74]. Routine trade-offs (conflicts between two secular principles) occurred, for instance, when the decision to introduce elephants for ecotourism benefits outweighed concerns about making the reserve more suitable for elephants before their arrival, resulting in high costs of elephant management. Another routine trade-off was the decision to kill a damage-causing elephant to prevent costs of management and damage, despite arguments that this intervention may not address the root cause of problematic elephant behaviour and may thus not prevent future costs. Taboo trade-offs (secular principles countered by sacred principles) arose when the rational decision to kill a damage-causing elephant was met with public outcry based on sacred principles related to the moral duty to protect elephants, and their intrinsic value, and, therefore, a right to live, which was mentioned by both the Dinokeng Game Reserve and Kekana Gardens residents. These trade-offs led to negative outcomes, such as social division and reputational damage, and may outweigh the positive outcomes of the intervention. Tragic trade-offs (conflicts between two sacred principles) occurred in the Dinokeng Game Reserve when the goal

of creating space for conservation and elephant habitat conflicted with concerns about animal welfare issues, given that this space was being established in an area of high human density. Another tragic trade-off arose when the reserve opened with ceremonial words addressing poverty and inequality, while other sacred principles were violated related to community members' access to land used for cultural and religious purposes, as well as principles of good governance (e.g., lack of transparency and communication, and missed opportunities to engage local community leaders) [75]. When considering the reserve's sacred intentions, this trade-off can be classified as a tragic trade-off. However, if the reserve's arguments are mainly secular (e.g., boosting the economy), this trade-off should be classified as marginalising. In either case, this may have contributed to less-than-desirable reserve–community relations. Marginalising trade-offs (sacred principles countered by secular principles) occurred when the community members expected the new Big Five Game Reserve to bring sacred outcomes related to increased human rights, dignity, and justice, but may have felt marginalised when they experienced mainly secular outcomes that were not always perceived as fair, meaningful, or empowering.

#### *4.5. A Theory of Change for Living in Harmony*

The findings of the interview, questionnaires and workshop were integrated by the authors to develop an overarching ToC for Living in Harmony [76]. The ToC represents a strategic framework that outlines the pathways from the current state to the desired state, based on the shared vision by the stakeholders (Figure 5). First, the current state was assessed by identifying the barriers and enablers of socio-ecological sustainability and understanding their interactions as experienced by both stakeholder groups (1a and 1b in Figure 6). Second, a shared vision for the Dinokeng Game Reserve was developed by combining elements identified by both stakeholder groups (2 in Figure 6). This shared vision provides a common goal and direction for future efforts. Third, potential solutions identified by both stakeholder groups (3a) were synthesised into five solutions that are based on common ground (3b). These solutions represent areas where consensus and agreement exist between the stakeholder groups, fostering collaboration and cooperation. Note that the solutions presented are not ranked in any particular order. Our qualitative methodology prioritises the identification of emerging themes and underlying patterns over the quantification of how frequently each solution is mentioned. Fourth, a circular dimension was added to the ToC, linking the common ground solutions back to the current state. Feedback 4a aids in removing barriers to coexistence and feedback 4b strengthens conditions for coexistence. These feedback loops promote learning, communication, trust-building, and unity among stakeholders. For instance, the feedback loop from good governance to barriers will increase trust, communication, and unity, thereby removing division, and transforming barriers into enablers (e.g., lack of trust (barrier) will become trust (enabler)). The iterative nature of the ToC [77] promotes a collaborative environment that fosters a spirit of codeveloping, cogovernance, co-accountability, and comanagement, which involves the sharing of power and responsibility for natural resource management with local communities [78,79]. It enables local people to partake in decision making, increase equity, resolve conflicts related to conservation, and promote overall sustainability of reserves [79]. Furthermore, it encourages a shift from linear thinking to circular thinking, considering the interdependencies and dynamics of the socio-ecological system. This cycle requires active learning, communication and facilitation by “learning organisations”, that strive to create, gain, and disseminate knowledge and experiences, using them to inform and modify policies and behaviour to reflect newly acquired insights [80]. By incorporating feedback loops, the iterative, adaptive, and holistic ToC aims to prevent harmful cycles and foster virtuous cycles that generate increasingly beneficial outcomes.



**Figure 6.** A Theory of Change toward a “living in harmony” conservation approach, based on data from the semi-structured interview, the Dinokeng Game Reserve and Kekana Gardens questionnaires, and the participatory workshop with Kekana Gardens respondents. The ToC starts by describing the current state and evaluating the barriers to (1a) and enablers (1b) of socio-ecological sustainability identified by both stakeholder groups. The overlapping sections highlight commonalities between the Dinokeng Game Reserve (green) and Kekana Gardens (blue) subgroups. The desired state reflects the shared vision created by combining elements identified by both stakeholder groups (2). To achieve the shared vision, the solutions identified by both stakeholder groups (3a) are integrated into five solutions based on common ground (3b). The ToC identified three important feedback relations (red arrows): more investment into integrated and coproduced solutions aids in removing barriers (feedback 4a, a negative association) and in strengthening enablers (feedback 4b, a positive association) of socio-ecological sustainability. As barriers are removed, they can turn into or strengthen enablers (feedback 4c, a negative association). The feedback loops create an iterative process with ongoing cycles [81], preventing harmful vicious cycles and promoting beneficial virtuous cycles [82]. The feedback relations play a crucial role in reducing inequality and difference, increasing unity, and expanding common ground [69,83]. As the common ground expands, support for conservation and human development decisions will likely increase, ultimately achieving the goal of living in harmony.

### 5. Discussion

The escalating pressure on natural resources calls for strategies that effectively reconcile conservation and human well-being goals. Nature conservation efforts can contribute to global aspirations such as equality, improved human well-being, and poverty reduction, provided that they incorporate the needs, rights, and values of all stakeholders. Furthermore, trade-off decisions, which are inevitable in balancing conflicting interests, should be

made through democratic and transparent processes, adhering to principles of good governance [56,84]. However, many conservation areas in South Africa are managed along the lines of a protectionist approach, with not only inadequate access and benefit-sharing for local communities [6,11,85], but also unilateral decision making. By excluding a large part of the population from the wildlife economy, conservation efforts actively reproduce social and spatial inequality [12]. Given the history of political struggle, diverging socio-economic circumstances and access to reserves [13], it is vital to develop solutions that acknowledge and address the disparities in influence, access, and values among stakeholders while seeking commonalities to reconcile their aspirations [19].

Although the Dinokeng Game Reserve has achieved positive outcomes in terms of biodiversity conservation (21,000 ha of land conserved) and job creation (800 direct jobs), its full potential has yet to be realised. This case study provides insight into who benefits from the reserve and the ecosystem services it provides and who does not, and the potential unintended consequences that can arise from conflicts produced by unequal socio-ecological relations. The assessment of the values held in relation to elephants revealed that both stakeholder groups hold and perceive moral values towards elephant conservation, in addition to the services and benefits derived from elephants. Incorporating moral values into conservation management decisions will create feedback loops that promote mutually reinforcing interactions between people and nature, creating virtuous circles towards socio-ecological sustainability [30,81]. For instance, facilitating consistent access to designated natural areas where community members can gather natural resources for cultural and economic practices aligns with their moral values and instrumental use values, fosters positive human–nature relationships, restores land alienation, and mitigates the risks of poaching [13,86]. Both stakeholder groups emphasised the importance of considering animal well-being in management decisions, which is reflected in existing regulations, including the Norms and Standards for the Management of Elephants [87], the recently gazetted National Environmental Management Laws Amendment Act (NEMLAA), and provisions therein for the Minister to establish regulations specifically aimed at promoting animal well-being [88,89]. Additionally, both stakeholder groups valued the existence of elephants for current and future generations and preferred the non-consumptive uses of elephants, highlighting the importance of filtering conservation decisions through a moral lens [30].

Exploring the benefits people experience revealed some differences that are crucial in understanding their attitudes towards elephants. The lower level of experienced benefits among Kekana Gardens respondents may explain their less positive attitude towards elephants. Even though elephants did not harm people in the Kekana Gardens community when they broke out of the reserve into Kekana Gardens community, the risk may have affected the attitudes of community members who were struggling with poverty, limited access to resources, risks associated with living in proximity to elephants, and inequality, which is in line with findings from other studies [89,90]. On the other hand, the Dinokeng Game Reserve respondents, despite experiencing more frequent damage or risk from elephants, felt that the benefits of elephants outweighed the costs and expressed more positive attitudes towards elephants. Real and perceived benefits, therefore, can shape and influence responses to risks associated with elephants [91]. To enhance positive attitudes and support for the reserve among Kekana Gardens residents, it is crucial to provide them with access to the benefits associated with elephants and the reserve (even though they live near an elephant reserve, most Kekana Gardens respondents stated that they only see elephants a few times per year (51.5%), or they only have seen elephants a few times in their lives (30.3%)). These benefits should not be limited to financial gains, as other non-financial benefits were deemed highly important by the respondents, such as the existence value of elephants for future generations, community development, and educational programs at local schools, and the existence value of elephants for future generations (Figure 2). Despite the challenges of reserve–community relations, it is evident that Kekana Garden community members recognise the value of the reserve (When asked, “What do people generally say

about Dinokeng Game Reserve in your community”, most Kekana Gardens respondents gave positive examples (60.7%) related to job creation, spin-off benefits from ecotourism, and excitement to see wildlife. Although most Kekana Gardens respondents stated that they have not personally benefited from the Dinokeng Game Reserve (60.0%), the majority believed that the reserve contributes to the development of the community (58.8%), and that Dinokeng Game Reserve residents have made efforts to support the local community (The majority of the Dinokeng Game Reserve residents (94.1%) stated that their household or company provides employment for people living in neighbouring communities (76.5%), which mostly entailed employment for two community members or more. Almost half of the Dinokeng Game Reserve respondents (41.2%) stated they support local businesses in the community (e.g., craft shops, restaurants, shops, cultural performances, or professional services), and another 41.2% mentioned they support community development initiatives (e.g., orphanages, training, or in-kind donations)).

Our findings underscore the need for conservation strategies that not only aim to minimise the costs of coexisting with wildlife in terms of human–wildlife conflict, but also to provide meaningful benefits to local communities and restore access to natural resources [92,93]. What this means will vary depending on the groups involved and the specific context. In its most basic form, this may involve providing free access for community members on certain days. In its most transformative form, this requires land reform, citizen or co-management, addressing power imbalances between private landowners and local people, and recognising moral values and non-material injustices [94,95]. Similarly, job creation as a conservation benefit can range from temporary construction, cleaning, or fence maintenance jobs with poor labour conditions, to permanent jobs which offer training and opportunities for career growth [12]. Studies have shown that people are more likely to turn to poaching when they are poverty-stricken, often as a result of marginalisation, so a vicious cycle plays out when the historical context of socio-ecological dilemmas is ignored [12,81].

Failure to consider the needs of elephants, and the needs, aspirations, and values of local people, can lead to consequences of interlinked human–elephant and human–human conflicts [96], which are characterised by four types of trade-offs: routine, taboo, tragic and marginalising trade-offs. This study (e.g., in the perceived values of elephants, the analysis of trade-offs, barriers/enablers, and the discussed solutions) highlights the importance of respecting people’s sacred principles, especially when expectations have been created regarding community upliftment [97]. Considering the context of the reserve–community relations, neglecting moral values means that the community is unlikely to compromise its sacred principles when faced with a marginalising trade-off. As the interview data showed, neglecting moral values and unfulfilled promises can result in negative outcomes and exacerbate conflicts (e.g., anger, crime, and reduced social cohesion) [97–99].

A potential conflict between secular and sacred principles may also occur due to differences in value systems. Leaders of the Kekana Gardens community use more traditional approaches to community development, guarding African customs, which may or may not be compatible with Western, liberal conservation and rural development models [100,101]. However, South Africa’s proposal to restore an African conservation approach aligns with the philosophy of Ubuntu (*Government Gazette*, 14 June 2023, No. 48785, 1–43) and can bridge this gap between these different perspectives, as it decolonises Western models of understanding human–nature interactions [101]. Ubuntu is an African social compact rooted in the interconnectedness of life and recognition of one’s position and well-being relative to another: I am because we are [101,101]. The philosophy promotes a deep respect for all forms of life and advocates for just and equitable relations between humanity and the natural environment [102]. By embracing Ubuntu, we acknowledge the intrinsic value of nature and the need for ecological and economic justice for all, ensuring that the benefits and burdens of environmental resources are shared equitably among all members of society [102]. Respecting these principles facilitates a transition toward coexistence between elephants, people, and the rest of the natural world, fostering mutual well-being and

sustainability for all. By recognising and addressing conflicts that arise from trade-offs, we can work towards resolving them in a manner that upholds principles of good governance and truly inclusive community development. Mapping the types of trade-offs and gaining insight into the values at stake allows us to identify and explore balanced solutions that can enlarge common ground among stakeholders [22,31].

Despite evidence of the importance of inclusive conservation, it is important to acknowledge the mixed results in the past of such models to effectively safeguard biodiversity; they often perform below expectations [103]. The transition to a more equitable and democratic conservation model will in all probability not take place without friction. The redistribution of wealth and power often invokes resistance from those who already possess these resources, while those who lack them will need to develop capacities and skills rapidly to leverage the benefit of access to these. We believe that the ToC for Living in Harmony, when properly inclusive of all relevant values and benefits and rooted in common ground, has the potential to clarify, and prevent the unintended escalation of, conflicts and, instead, unite people towards common goals. The failure of integrated approaches may stem from a disparity between the way in which managers and policymakers believe conservation should benefit communities and the varying viewpoints, needs and interests of those communities that are insufficiently involved in decision making, or from community participation that is intended to make people comply to management plans instead of transforming conservation strategies into participatory and inclusive processes [97,104]. In the context of this case study, a transformation towards inclusive conservation is especially challenging considering the historical, political, and structural dynamics at play [96]. We also acknowledge that co-management may be challenging in a reserve of this form particularly in relation to animals like elephants. In this sense, co-management may centre around more engagement around how human–elephant and human–human relations should be managed in and around the park. Although the implementation can be more challenging and controversial than anticipated, this does not mean that integrated approaches should be discarded. Instead, it highlights the necessity of dedicating additional effort, expertise, research, and resources towards improving strategies of inclusive conservation, and creating a sincere interest and stake in conservation among community members who ended up situated outside a fenced area [97,103].

The shared vision that emerged from this study aligns with South Africa's new biodiversity conservation vision of "an inclusive transformed society living in harmony with nature, where biodiversity conservation and sustainable use ensure healthy ecosystems, with improved benefits that are fairly and equitably shared for present and future generations" (*Government Gazette*, 14 June 2023, No. 48785, 1–43) as well as with global "Living in harmony with nature" conservation strategies [1,5]. The solutions identified aim to promote unity, and equity in the distribution of benefits derived from nature conservation on the one hand, and the expansion of elephant or other wildlife habitats on the other hand. These solutions strive to generate mutually beneficial outcomes for biodiversity and multiple stakeholders, ensuring that the needs of diverse stakeholders are effectively addressed. Good governance, including building relationships, trust, fair participation, knowledge sharing, and clear communication, was identified by both stakeholder groups as crucial for achieving socio-ecological sustainability, which was also found in other studies [105,106].

Convivial Conservation, a post-capitalism approach that goes beyond traditional conservation models, seeks to integrate different value systems, and promote social and ecological justice [19,107]. Taking a Convivial Conservation approach, proposals can be explored to establish community-owned (parts of) reserves and wildlife-based tourism models. These proposals align with South Africa's aspirations of land restitution and redistribution, aiming to address historical injustices and provide local communities with meaningful participation and benefits from wildlife conservation efforts [38]. Recognising the complexity of achieving a vision of living in harmony, it is crucial to acknowledge the presence of diverse perspectives and understand that this vision cannot be easily or instantly realised [108]. In a developing country with a history of apartheid and colonial-

ism, where local people are often excluded from conservation areas, it is not surprising to encounter negative attitudes towards game reserves and wildlife [38]. Elephants, as symbols of wildlife reserves that perpetuate the marginalisation of local communities, may even become emblematic of exclusion and inequality in the eyes of these communities, in which case the lack of community support for elephants is representative of their marginalised position in relation to conservation, rather than how they may actually value elephants [12,109]. From this perspective, human–human conflict acts as a driver of human–elephant conflict. These perspectives have been echoed many times before, where communities stated that wildlife (including penguins, rhinoceros, and other emblematic wildlife) is assigned more importance than the lives of black people [12]. Therefore, the ToC presented in this study provides an iterative and adaptive approach that is general enough to be applied to different species and socio-ecological contexts. Its adaptability stems from its emphasis on broader socio-economic, ecological, and political issues, as well as its inclusion of the human dimensions in conservation. The framework aids in identifying and addressing factors that contribute to or hinder socio-ecological sustainability and coexistence in various contexts. The phased approach outlined in the ToC involves the collaborative implementation of solutions by a suite of learning organisations [78]. Through this co-implementation and co-management, the current state can be iterated and transformed over time, leading to socio-ecological sustainability [79]. To transition from the current state to the desired state, we propose several shifts, such as moving from participation to co-production or ownership, from temporary jobs to career development and personal growth, from narrow, conventional conservation funding to innovative financial mechanisms that ensure equitable sharing of the global value of iconic species with local communities, and from separating people from nature to emphasising interconnectedness and collaboration. To validate the buy-in to the ToC, it is crucial to involve the community, residents, and reserve owners and managers in the feedback process, which can be a part of future research efforts. Through collaboration between the stakeholders in improved co-management arrangements, these interventions and investments will evolve, and the prioritisation of what needs to be carried out to support transformation will be decided through these processes. It is our hope that the pluralist framework, while normative and idealistic in a highly unequal world, can guide policymakers and managers in identifying common visions. The shared vision can serve as a catalyst for transformative change, enabling the restoration and rewilding of lands, the empowerment of marginalized communities, and a transition toward more inclusive conservation practices [19,21,56,84]. By recognising areas of polarisation, establishing areas of common ground, and minimising the negative consequences of trade-offs, the framework promotes harmony and sustainable outcomes [84].

## 6. Conclusions

The case study presented in this paper juxtaposes the intricate challenges of biodiversity conservation in developing countries and emphasises the need to consider the interconnections between natural and social systems, as well as moral values, in conservation decision making [30,56]. A pluralist approach places conservation in a broader context, incorporating diverse knowledge and value systems and overcoming social division by seeking commonalities [38,84]. Elephants, as iconic and keystone species, have the potential to play a crucial role in accelerating rewilding processes as megaherbivores and providing benefits to local communities and society at large [38,56,110,111]. Thereby, they can serve as our allies in achieving global goals, such as equality and protecting 30% of the Earth's land by 2030 [56,111–113]. The insights gained from this study can inspire a transformative conservation narrative that moves beyond conventional protectionist approaches, fostering common ground, and mitigating issues related to community marginalisation. This can catalyse action to increase natural areas and rewild degraded land, while fostering harmonious and meaningful relations between conservation reserves, local communities, and wildlife. By embracing the principles of Ubuntu, conservation efforts can not only

contribute to global conservation goals like reversing biodiversity loss, mitigating climate change, or protecting land [1], but also to poverty alleviation, enhancing equality, and social cohesion, ultimately achieving the goal of living in harmony [8,18].

**Supplementary Materials:** The following supporting information can be downloaded at: <https://www.mdpi.com/article/10.3390/d15101041/s1>, The Dinokeng Game Reserve questionnaire (Section S1), the Kekana Gardens questionnaire (Section S2), and examples of potential solutions to reduce barriers and promote enablers of human–elephant coexistence and enlarge common ground (Section S3).

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**Institutional Review Board Statement:** The study was conducted in accordance with the Declaration of Helsinki and approved by the University of KwaZulu-Natal Humanities & Social Sciences Ethics Committee with protocol reference number HSS/0036/019D. Gatekeeper permission letters were provided and signed by the Dinokeng Game Reserve management and a Kekana Gardens All-Blocks Chairperson. Informed consent was obtained before participants enrolled in the study.

**Data Availability Statement:** The data presented in this study are openly available at [doi].

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