

Insights into Leadership, Gender and Organisational Effectiveness Revealed by Benchmarking Conservation Programmes against the Conservation Excellence Model

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Abstract

Effective leadership has been advocated as important in guiding successful conservation programmes to achieve more impactful biodiversity results. Conservation work demands diverse capabilities, so organisations must be aware of what influences leadership effectiveness, including the influence of gender. The Conservation Excellence Model (CEM) allows assessment of conservation project effectiveness, including leadership aspects. The objectives of this study are to: 1) evaluate a mammal species conservation programme in Brazil, a region of critical importance to biodiversity, 2) benchmark with other conservation programmes to identify effective practices, and 3) conduct an in-depth evaluation of leadership skills to explore gender-related aspects of leadership. This study emphasises that good conservation organisational practices are related to Monitoring and Evaluation (within Strategic planning and Theories of Change) and the engagement of the local community. Both male and female leaders displayed common leadership characteristics such as the ability to build partnerships, establish the programme's purpose and vision, and delegate tasks. Both females and males were considered committed leaders, although only men were described as "role models". Other differences included how women were characterised as "hands-on managers" and men as "giving training opportunities". Leadership roles appear male-dominated, representing challenges for women to achieve higher positions. Women notably face a lack of mentorship, lengthy work hours, exclusion from decision-making, and sexual harassment. Nevertheless,

a more diverse leadership community which includes women will be critical for promoting future organisational effectiveness and positive biodiversity outcomes.

Keywords

Biodiversity Conservation, Community Engagement, Human Wildlife Coexistence, Introduction to Leadership Women Leaders, Gender, Jaguars of Iguacu Programme

1. Introduction

A variety of responses have been made to address the well-documented global challenges of habitat loss, human exploitation of natural resources, threat of extinction to numerous species, degradation of ecosystem services, and the wider climate crisis (Díaz et al., 2019; Ceballos et al., 2020; IPCC, 2021). Most initiatives are delivered by three types of institutional structures: government bodies, non-governmental organisations (NGOs) and commercial organisations (Kellert, 1994; Westrum, 1994). Of those, according to Clark (2021), conservation NGOs undertake and complete the most effective and impactful work. NGOs are well-positioned to succeed in situations where government bodies might face operational problems, since NGOs can work with a wide range of partners such as practitioners, researchers, and decision-makers on different levels (Clark, 2021).

Despite ongoing efforts, there remain many significant challenges to achievement of global conservation (Secretariat of the Convention on Biological Diversity, 2020; Almond et al., 2020). One barrier is the gap between scientific knowledge and conservation practices (Sutherland & Wordley, 2017), where science and practice are not integrated, leading to a discrepancy between the information needed on the ground with the type of information that has been generated by researchers (Dubois et al., 2020). As a result, conservation professionals rely on their own experience (rather than scientifically established facts or evidence-based methods), which can reduce effectiveness and lead to failures (Sutherland et al., 2004; Sutherland & Wordley, 2017; Amavassee et al., 2022). Other important points that contribute to failure include a lack of government support and interference from funders (Clark, 2021), interpersonal relationships issues among staff and partners (Bonar, 2007), lack of adequate planning and management (Catalano et al., 2019), and ineffective data monitoring (Saterson et al., 2004). In addition, the general working environment encountered in conservation itself represents a challenge due to its unpredictability, insufficient resources and challenging environmental conditions for work on the ground (Black, Groombridge, & Jones, 2011; Stebbings et al., 2016). In this context, managers play an important role in improving conservation outcomes (Black, Groom-

bridge, & Jones, 2013), and leadership competence is now recognised by professionals in the sector as a key area where effectiveness can be improved (Manolis et al., 2009; Black, 2021).

The management of conservation organisations is directly influenced by its leader (Black, 2018). Conservation programmes are challenging and demand a wide range of different skills to enable teams to achieve conservation goals (Englefield et al., 2019; Loffeld et al., 2022a). Black, Groombridge and Jones (2011) identified and catalogued skills in four important areas of leadership, namely: 1) the ability to establish and share a clear set of conservation goals, 2) “hands-on” management, being involved and being able to work with staff and in partnership with a wide range of stakeholders, 3) ability to shift from details to the big picture, and 4) a learning and improvement mindset, which can increase organisation effectiveness and improve biodiversity outcomes (Englefield et al., 2019). In contrast, weak leadership is characterised by miscommunication, interpersonal conflict and lack of management skills, which lead to a lack of workforce focus, and increased waste of resources (Black, Groombridge, & Jones, 2013). However, leadership is not only about the absence or the presence of a set of skills. Leadership is also influenced by gender, since women and men may demonstrate different behaviours and display different abilities when facing contrasting work conditions and opportunities, and this can impact organisational outcomes (Jones & Solomon, 2019). For example, Tenouri (2020) points out multiple differences between men and women related to decision making, with the latter relying more on evidence-based information. Although evidence-based decisions could potentially lead to better-informed choices, they can also delay decision-making. Men, on the other hand, show more self-confidence and take more risks, a trait potentially helpful in conservation crisis situations (Martin et al., 2012). That said, diverse leadership can be related to an increase in the effectiveness of problem-solving (Nielsen et al., 2017).

Although leadership has recently gained more attention as important for conservation professionals in addressing environmental issues (Dietz et al., 2004; Case et al., 2015; Evans et al., 2015; Manolis et al., 2009), it is still under-researched (Bruyere, 2015; Englefield et al., 2019; Webb et al., 2022). Effectiveness can be defined by various tools to “measure the adequacy of an organisation’s purposes and the extent to which those objectives are attained” (Aborass, 2021), so research has tended to focus more on understanding organisational aspects which contribute to conservation effectiveness. Considering the important role played by conservation leaders, a better understanding of the links between leadership and gender also has the potential to help us to improve organisational outcomes, and consequently, global biodiversity practices and achievements (Black, 2019; Jones & Solomon, 2019). However, there remains a lack of study on leadership, and specifically the relationships between leadership and gender and minorities, in the conservation sector (Jones & Solomon, 2019; Tallis & Lubchenco, 2014; Bowser et al., 2012).

The ongoing effort to improve conservation programmes has led to the de-

velopment of different evaluation frameworks, including the Conservation Excellence Model (Black & Groombridge, 2010) and the IUCN Framework for Evaluating Protected Areas (Hockings et al., 2006). The Conservation Excellence Model (CEM) is adapted from the well-established business framework, the European Foundation for Quality Management model, but is specially adapted for use in the conservation sector (Black & Groombridge, 2010). The CEM is composed of nine criteria divided into two main areas: “approach” and “results” which encompass aspects of an organisation’s focus, including ecological, social and management areas (Black, Groombridge, & Jones, 2011) and importantly, the evaluation specifically addresses leadership. Each criterion receives a score to inform a final score for the programme, allowing benchmarking comparisons (Moore et al., 2020) which provides insight into organisational practices (i.e. how good the organisation is compared to others) and supports future improvement (Amavassee et al., 2022).

A formal assessment of conservation programmes can support practitioners by providing information to enable a more evidence-based approach to management (Dubois et al., 2020) and an opportunity to consider the use of new management tools (Moore et al., 2020). Evaluations of this type are useful, particularly in programmes in high biodiversity areas, as it is suggested by Wilson et al. (2016) since these areas receive less attention and are currently under-represented in scientific papers. CEM assessment also offers “action research” focused on the organisation itself, providing useful learning of immediate practical benefit (Coughlan & Coughlan, 2002). In light of this situation, analysing conservation programmes in Brazil with the CEM Assessment can inform our understanding of the relationships between leaders, their gender, conservation practices, and conservation outcomes (Black, Groombridge, & Jones, 2011) as they apply to work in a megadiverse country. The specific objectives of this study are to 1) evaluate a selected mammal species conservation programme in Brazil, 2) benchmark across other conservation programmes from different contexts to identify effective practices and success factors and 3) to conduct an in-depth evaluation of leadership skills using CEM evaluation to explore gender-related aspects of leadership.

2. Methods

A mixed approach was followed to complete the assessment of the Jaguars of Iguazu Programme, and to enable comparisons with leadership practices in other organisations (Moore et al., 2020; Amavassee et al., 2022), as detailed below.

2.1. Main Study Site: The Jaguars of Iguacu Programme

The Jaguars of Iguazu Programme is led by a female conservation professional, so is ideal for examination of gender effects on leadership and organisation and performance of the programme. The Jaguars of Iguazu Programme is located in the National Iguazu Park, a Protected Area (PA) category IV with 185,263 Ha of

Atlantic Forest that also encompasses the Iguazu Waterfalls (Natural Heritage of Humanity) in the South of Brazil. The Park is home to enormous faunal and floral biodiversity, including endangered species such as the jaguar (ICMBio, 2018). The jaguar, one of the most charismatic and well-known top predators and an important umbrella species in its home range, is considered critically endangered in the Brazilian Atlantic Forest. Habitat loss and fragmentation and retaliatory killings are considered threats to jaguars (WWF, 2019). Despite this situation, the Atlantic Forest in the south of Brazil remains an important home range for a significant jaguar population.

The National Iguazu Park's surroundings (10 km radius) encompass fourteen municipalities of the state of Parana (Brazil) and have boundaries with Argentina (ICMBio, 2018). The local community is composed of smaller farmers from Rio Grande do Sul State and Santa Catarina State who migrated to the area in the 1960s (Vencatto, 2017) alongside the indigenous people of the region (ICMBio, 2018). The main activities conducted in the area are agriculture and cattle ranching, timber harvest and tourism (ICMBio, 2018).

Efforts to promote jaguar conservation were started in the region by Dr Peter Crawshaw Jr, a pioneer on jaguar studies in the 1990s (Franco, Drummond, & de Mesquita Nora 2018). Despite the efforts, the jaguar population in the area declined, largely driven by retaliatory killing and a lack of measures to deal with human-wildlife coexistence. From 2009 until 2017, a preceding species conservation programme called "Carnivore of Iguazu" was operating, focusing directly on jaguar conservation. From 2017, the programme was reformulated as the "Jaguars of Iguazu Programme" under a new leadership role and, in particular, including significant community engagement in its work. The aim of the Jaguars of Iguazu Programme is to "promote jaguar (*Panthera onca*) conservation, as a key species for the maintenance of biodiversity in the region of the Iguazu National Park" (Jaguars of Iguazu Annual Report, 2020).

2.2. Collation of Information on Programme Performance

The Jaguars of Iguazu programme was reviewed remotely (due to covid-19 travel restrictions) by an independent primary assessor from April to July 2021. Data collection for the review included mixed-methods desk-based review of sources including reports, media communication releases, email communication with the programme's leader, 12 semi-structured interviews conducted on-line, and a questionnaire (described below) which was distributed to the local community by designated responsible local persons in compliance with covid restrictions in Brazil. Subsequent information on the programme's approach and performance was collated into a "position document" (Black, Meredith, & Groombridge, 2011; Moore et al., 2020; Amavassee et al., 2022) which was evaluated by a group of qualified CEM assessors. To become CEM-qualified, assessors are required to have previously completed a three-day intensive training programme (with calibrated case studies) and have conducted two supervised CEM assessments (Amavassee et al., 2022), thereby acquiring significant knowledge of organisa-

tional effectiveness.

The semi-structured interviews (Newing, 2010: pp. 100-115) target members of the programme and national and international partners. Six interviews were conducted with the programme (leader and staff members) and six with main partners selected and agreed with the leader. Each interview was conducted on-line using the Zoom platform and lasted around 50 - 60 minutes and was conducted in Portuguese and English. The audio was recorded using an Easy Voice Recorder. Participants gave written consent for their voluntary participation and awareness of confidentiality. All data collection was carried out in accordance with the standards of the American Anthropological Association and authorised by the School of Anthropology and Conservation (University of Kent) Ethics Review process.

The community questionnaire was developed by the primary assessor but conducted in-person on the ground by two members of the Jaguars of Iguaçu programme. The aim of the questionnaire was to understand perceptions of local people, targeting individuals that either had experienced an incident with Jaguar predation or were involved in the programme itself as a volunteer and have been used on similar community surveys for similar assessments (Moore et al., 2020). The questions identified the person's farming interests, their awareness of the programme, their understanding of its goals, the relevance of jaguars to their lives, their level of participation (as volunteers), the benefits they derive from the programme (if any), the support that they receive, the working relationships with programme personnel, and improvements needed in the programme. Questions were devised with reference to the sub-criteria of the CEM model, as well as exploring people's views and understanding of the programme, biodiversity and local community results. Questions were mostly open-ended (providing qualitative data) but also several responses required a simple closed Yes/No response. The questionnaire included 21 questions across 4 sections: background, perception of the jaguar programme, human-wildlife coexistence, and volunteer experience. The content validity of the questionnaire (including its presentation in Portuguese for comprehension by local people) was checked with reference to a conservation academic, an independent conservation professional from Brazil, and the programme community lead within the Jaguars of Iguaçu programme. The data collection process was validated by the Ethics Review process in the School of Anthropology and Conservation at the University of Kent, following the principles and guidelines of the American Anthropological Association.

2.3. Conservation Excellence Assessment of “Jaguars of Iguaçu”

The Conservation Excellence of the Jaguar programme was assessed against the CEM, to enable comparison with other programmes and to facilitate analysis of the leadership in all benchmark programmes against established leadership frameworks of effective leadership. The CEM Assessment document (the “Position Document”) for the Jaguar Programme included all information gathered

during data collection and comprised 48 pages divided into nine sections (covering the nine CEM criteria) plus background and context information and photographs. The Position Document was suitable for systematic organisation assessment (Moore et al., 2020) and, despite the lack of site visit (due to covid-19 restrictions) the document exceeded the standard of equivalent remotely collated position documents which have been previously demonstrated as valid for CEM assessment exercises (Amavasse et al., 2022).

The programme assessment (data analysis) involved evaluation of the Position Document by four external assessors (one recently trained assessor selected for their specific local knowledge of Brazilian conservation, plus three experienced assessors with wider conservation work experience in Europe, Africa, North America, South America, and Asia). Assessment was conducted in a four-hour online consensus workshop. Assessors had ten days prior to the workshop to individually review the document. For each of the nine CEM criteria, the assessors noted the project's strengths, areas for development, and recommendations, as well as a score for each criterion using the standard CEM scoring methodology (Moore et al., 2020). A final score was discussed and agreed upon during the consensus meeting.

2.4. Benchmarking through Comparison of Programme Excellence

Two types of benchmarking comparisons were conducted 1) to compare several programmes across the nine CEM criteria and to identify effective organisation practices and 2) to compare the leadership assessed in different programmes, providing an in-depth evaluation, and analysis of approaches by women and men in leadership roles. The first comparative analysis was conducted using six programmes selected for the community-engagement focus of their work, yet which were located in different regions and in a variety of context (Table 1, Programmes 3, 5, 6, 7, 8, 9). Each programmes' score profiles (assessed using the CEM) were compared with the Jaguar programme's final weighted scores from the consensus workshop. In addition, a content analysis (Newing, 2010: pp. 242-253) was conducted on assessors' comments on strengths and weaknesses identified in each programme.

2.5. Comparing Leadership Approaches

The second analysis examined 10 conservation programmes; the Jaguar Programme itself plus all nine selected comparison organisation (Table 1). The selected programmes addressed either species conservation (6) or community-engagement (4) with six programmes led by women, while men led four. Content comparisons addressed the information collected in each programme's CEM report, against the four conservation leadership themes (Table 2) established by Black, Groombridge and Jones (2011) which is known to be one of the most comprehensive conservation leadership frameworks (Case et al., 2015). The content analysis of each programme identified whether programme leaders

Table 1. Summary of sampled benchmark conservation programmes. Each programme has been previously assessed against the CEM criteria by a group of trained independent assessors.

Programme 1: Global Carnivore Programme

Promotes carnivore species conservation by delivering projects and strategies at continental level. Founded in 2007 as a joint initiative by several organisations, the small team (mostly female) is led by a woman supported by directors and coordinators in partner organisations.

Programme 2: Mammal Conservation Programme in South Asia

A multidisciplinary collaborative project conserving endangered mammals through captive breeding, habitat restoration and reintroduction. It was founded in the early 1990s and led by a man. Although a relatively small organisation, it is considered a highly influential programme in South Asia.

Programme 3: Island Community Programme (Agriculture, Reforestation and Marine)

Focused on sustainable landscapes in partnership with local communities through rural development (agriculture), marine (coastal fisheries), reforestation, biodiversity conservation, and ecotourism. Located off the East African coast and founded in 2013, it is led by a man with a majority male leadership team and 60 staff.

Programme 4: Caribbean NGO

Established in 1995 (revised in 2010) to promote biodiversity conservation and sustainable livelihoods, it is led by a woman (the only employee) supported by volunteers. It established a marine PA, wildlife monitoring, environmental education, and invasive species control.

Programme 5: North African Community Agroforestry

Promotes sustainable development for local communities using a participatory approach to increase people's income, capacity (skills) and support of environmental conservation. The programme has planted millions of trees and the outcomes include visibly changed landscapes in remote rural areas. It was founded in 2000, it is led by a man with 22 staff plus a network of volunteers.

Programme 6: Madagascar Community Protected Area project

Aims to improve communities' livelihood, aligned with environmental conservation and sustainable resource use. It was established in the early 2000s is led by a woman and has 15 staff members. A significant achievement was the creation of the community-managed PA.

Programme 7: Southeast Asian Community Fisheries Project

Preserves nature and ecosystem services in an important Asian freshwater system, building law enforcement and community support for biodiversity and environmental conservation. Founded in 2010 and led by a woman, its 26 employees work with community participants.

Programme 8: UK Bird Reintroduction

This utilises a flagship bird species to promote coastal restoration in a programme founded in 2012, as a partnership between several organisations. Led by a woman, the programme's activities focused on habitat restoration (state and private land) and species conservation.

Programme 9: Brazilian Forest Programme

A state programme that promotes forest conservation and local livelihoods through sustainable practice in a region of high importance to biodiversity. The programme is led by a man with a team of 9 staff (all public employees). Activities include promotion of landowners' engagement (forestry, agriculture) in new practices, monitoring and management.

Table 2. A summary of the four main categories of the Black, Groombridge and Jones (2011) leadership model. The model includes approximately ten specified qualities of leadership under each of the four categories (see Table 4).

Categories	Explanation
Vision and goals	Ability to share a clear, long-term vision—purpose, knowledge, plans, governance, metrics
Hands -on Leadership	Orientation toward “hands-on” management—esnvovement, listening, cultural sense, delegation
Details and big picture	Ability to switch attention between wider context and details—problems, budgets, funding, partners
Improvement and learning	Willingness to encourage learning, improvement, and receptiveness to alternative solutions—capability, error management, training

demonstrated any of the leadership qualities proposed by Black, Groombridge and Jones (2011). Additional validation was achieved by comparing the internationally-tested multi-sector “Five leadership practices” from Kouzes and Posner (2012), also acknowledged within conservation literature as an important generic leadership model (Englefield et al., 2019; Black, 2021). In addition, each programme was also classified as mainly dominated by male or female leadership teams. Characteristics identified and counted in each programme were totalled with the main characteristics that describe female and male leadership approaches separated out, identified and compared.

3. Results

3.1. Jaguar of Iguacu Programme CEM Assessment

The Jaguars of Iguacu Programme assessment generated a total CEM score of 529.7 (Table 3). Each criterion score was agreed by assessors based on a consensus on two dimensions for each, namely approach/deployment scores (for each Enabler, the mean giving the criterion score) and Results/Scope (for each Result criterion, in the same way). The overall score for each criterion (nominally the mean) was agreed by the assessors across all criteria and then a weighted total was calculated (the weight for each criterion is shown in Table 3, column 5) to give a score out of 100 points. The programme score (rounded to the nearest whole integer) of 530 points is considered an excellent score for such a young programme that has been running less than five operational cycles (usually five calendar years). Results of the assessment, as emphasised by the professional CEM assessors, was enhanced by the programme’s ability to learn and incorporate good practices from the previous programme (Carnivore of Iguacu started in 2009). The strongest criterion scores feature in “Policy and Strategy”, “Core Conservation process”, and “People and Community Results”. The “Policy and Strategy” criterion showed that the Jaguar programme has well-developed strategic

Table 3. Jaguars of Iguacu Programme assessment results agreed by external assessors, across the nine CEM criterion parts, with an overall final score. The Enablers' Approach and Deployment Scores and the Results' Results and Scope scores generate each Raw Score. The Weight of each criterion multiplied by the Raw criterion score generates the "Weighted Score" which are totalled to give a Final Score out of 1000. For information the maximum score contribution of each criterion is listed (each also shown in the last column as a % of the total model).

Criteria	Scores	Raw Score	Weight	Weighted score	Maximum score	% of total	
Enablers	Approach	Deployment					
Leadership	51	57	54	1	54	100	54
Policy and strategy	62	60	61	0.8	48.8	80	61
Management	49	49	49	0.9	44.1	90	49
Resources and partnership	40	47	43	0.9	38.7	90	43
Core process	60	64	62	1.5	93	140	66.4
Results	Results	Scope					
Biodiversity results	51	49	50	2	100	200	50
People & community results	42.6	45	57	0.9	51.3	90	57
Impact on society	48	66	43.8	0.6	26.3	60	43.8
Programme results	46	52	49	1.5	93	150	62
Final Score (Total)					530 (529.7)		

planning. Strategic plans were established using the "Conservation Standards and Brazilian Environmental Plans for Big Cats", alongside an annual review process with the programme's leader, members and partners. The programme has also incorporated important tools such as the Theory of Change and Adaptive Management. In the "Core Conservation Processes" criterion assessors identified that the programme had an interesting learning and improvement approach involving innovative practices and holistic learning through extensive adaptive planning.

The Jaguar Programme's "People and Community Results" stand out due to outcomes arising from the programmes well-developed practices with local communities to deal with Human-Wildlife Coexistence, providing support through routine visits, which has helped to build a relationship with the local community. It is also important to highlight that the Jaguars of Iguacu programme received a strong score in "Biodiversity results", which is something unusual among young programmes. Biodiversity results were accumulated from a well-established set of scientific practices from previous projects and the de-

velopment of important partnerships that increase data collection efforts and scope. Conversely, the programme needs to improve aspects related to financial management (e.g. accessing more long-term funding to guarantee financial stability), and assessment tools to evaluate the results of local communities' engagement and human-wildlife coexistence activities. The current limitations to the number of operational cycles mean that the programme has yet to be able to demonstrate clearly sustainable outcomes, which is a normal constraint on a young programme, and curtails its achievement of a higher overall score.

3.2. Benchmarking Scores from Comparison Programmes

In the comparisons of the Jaguar of Iguazu Programme against five previously assessed programmes, the highest score is 543 for the Island community programme (agriculture, reforestation and marine), followed by the Jaguar of Iguazu Programme scored of 530 (**Figure 1**), suggesting the programmes' similar level of excellence. Both are considered well-structured organisations, indicated by scores in excess of 500 points ([Moore et al., 2020](#)). It is important to mention that the Island community programme (agriculture, reforestation and marine) was first assessed in 2014 and then reassessed in 2017, showing an improvement of 40% in organisational performance over that period ([Amavassee et al., 2022](#)). Both the Jaguar of Iguazu Programme and Island community programme (agriculture, reforestation and marine) have important organisational practices in common such as 1) Development of good Strategic Planning including involvement of staff and partners in the process, 2) Good evidence of local community support and engagement practices and 3) Establishment of Theory of Change.

In general, all ten of the assessed benchmark programmes have shown community engagement practices, dedicating efforts to build a relationship with the community, improve livelihood, and offer training opportunities. All communities seem to support the work conducted by each organisation. On the other hand, aspects related to local communities are also considered one of the flaws of all programmes (or at least is an area requiring significant improvement). A lack of measures to understand the work carried out with local communities and improvements required in the level of community engagement were identified among all programmes. In addition to that, there is also a lack of ongoing measurement and evaluation of staff well-being.

3.3. Comparison of Leadership Approaches

The CEM Leadership criterion of each programme was benchmarked against the [Black, Groombridge and Jones \(2011\)](#) model (**Table 4**), highlighting that the most common category among men and women was identified as "Create an attitude of cooperation with partners, sharing information to improve the work" (8 out of 10 leadership groups), "Establish a stable, shared long-term vision and a common sense of purpose", (7 out of 10) and "Place responsibility and control of information in the hand of people who do the work" (7 out of 10) (SI 3).

Table 4. Characteristics identified in leaders of 10 sampled conservation programmes (shown under the four themes from Black, Groombridge and Jones, 2011). The most commonly observed leadership characteristic descriptors in each theme are in **bold text**.

VISION AND GOALS	Count
Establish a stable, shared long-term vision and a common sense of purpose	7
Identify what is happening to, or affecting, biodiversity	1
Set clear, short-term achievable goals.	4
Ensure flexibility in all levels of planning.	
Consider view of stakeholders and partners.	6
Ensure planning starts with understanding current performance relative to program purpose.	1
Ensure that staff embrace project aims and culture (vision, understanding the system, goals).	6
Get people to measure performance in relation to project aims.	1
Advocate good governance, particularly in large complex projects.	
Ensure congruency between plans, action on the ground and results.	1
Total	27
HANDS-ON LEADERSHIP	
Be orientated toward “hands-on” management, working with staff.	5
Possess highly developed biological and/or operational skills appropriate to the program	4
Be able to prioritise the work by asking key questions.	
Know people’s strengths; channel their energy and passion to maximum effect.	1
Understand cultural differences and manage people’s expectations and viewpoints sensitively.	
Check results with staff and empower them to get the job done.	4
Involve the people doing the work in data analysis, decisions, and implementing changes.	1
Place responsibility and control of information in the hands of people who do the work.	7
Ensure that an understanding of what matters to biodiversity steers the work people do.	
Have two-way communication meetings, with an emphasis on clarifying, testing, and listening.	1
Ensure managers lead; spend time with staff, listen to concerns, and enable contributions.	2
Total	25
CONSIDER BOTH PROJECT DETAILS AND THE BIG PICTURE	
Focus both internally and externally, understanding intra- and inter-organisational dynamics.	1
Know projects’ sphere of influence—identify the solvable problems.	
Establish budgets and a clear fund-raising strategy.	2
Examine financial and nonfinancial measures; which predict and cause conservation results?	
Base information, technology, and resource needs on how they help people’s core work.	
Create an attitude of cooperation with project partners, sharing information to improve work.	8
Anticipate unexpected outcomes.	
Be prepared to seek specialist advice from external sources.	2
Integrate management flexibility alongside professional/scientific rigor.	
Determine whether data on staff, communities, or society would be useful for the program.	
Total	13

Continued

IMPROVEMENT AND LEARNING

Give people the opportunity to ask for training and provide it on a just-in-time basis.	5
Be receptive to (and seek out) alternative solutions.	6
Enable staff to challenge, share, and learn from mistakes, without fear.	2
Expect—and support staff to strive for—high standards.	
Expect the project (and its needs) to evolve through time.	3
Understand risk factors and make suitable contingencies.	
Appraise the system rather than people; manage morale, celebrate success, learn from failures.	2
Make improvements based on biodiversity needs and process performance, not arbitrary targets.	
Recognise difference between neglect and lack of capability (training, experience, or resources).	
Allow people doing the work, the freedom to experiment with methods to improve performance.	
Total	18

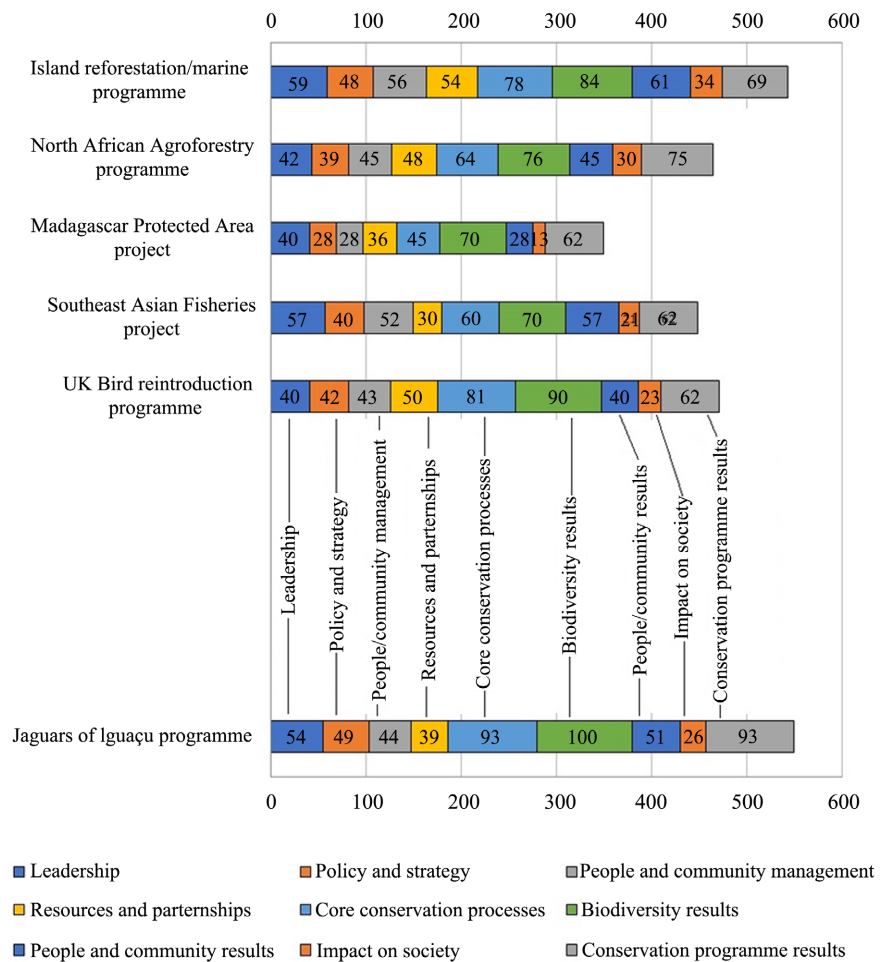


Figure 1. Comparative histogram showing the Jaguars of Iguacu Programme relative to five other community-oriented programmes (Moore et al., 2020; Amavassee et al., 2022) assessed against the Conservation Excellence Model (CEM), including indicators (by colour) of the nine separate criterion scores in each CEM Assessment.

When compared by gender, “Be orientated toward hands-on management, working with staff” was a characteristic most predominant among women leaders, while “Give people the opportunity to ask for training and provide it on a just-in-time basis” was predominant in male leaders. The characteristic that assessors used most to describe men was “role model” whilst women were “involved”, “hard worker” and “passionate”, while both were viewed as committed. The score profiles across the 9 CEM criteria on each programme (as generated by separate independent, qualified CEM assessor teams) were collated into two groups: male-led programmes and female-led programmes. For a comparison of these CEM profiles of programmes led by men and women, see **Figure 2**. Male-led and female-led programmes showed some commonality in patterns of lower-scoring and higher-scoring CEM criteria (**Figure 2**).

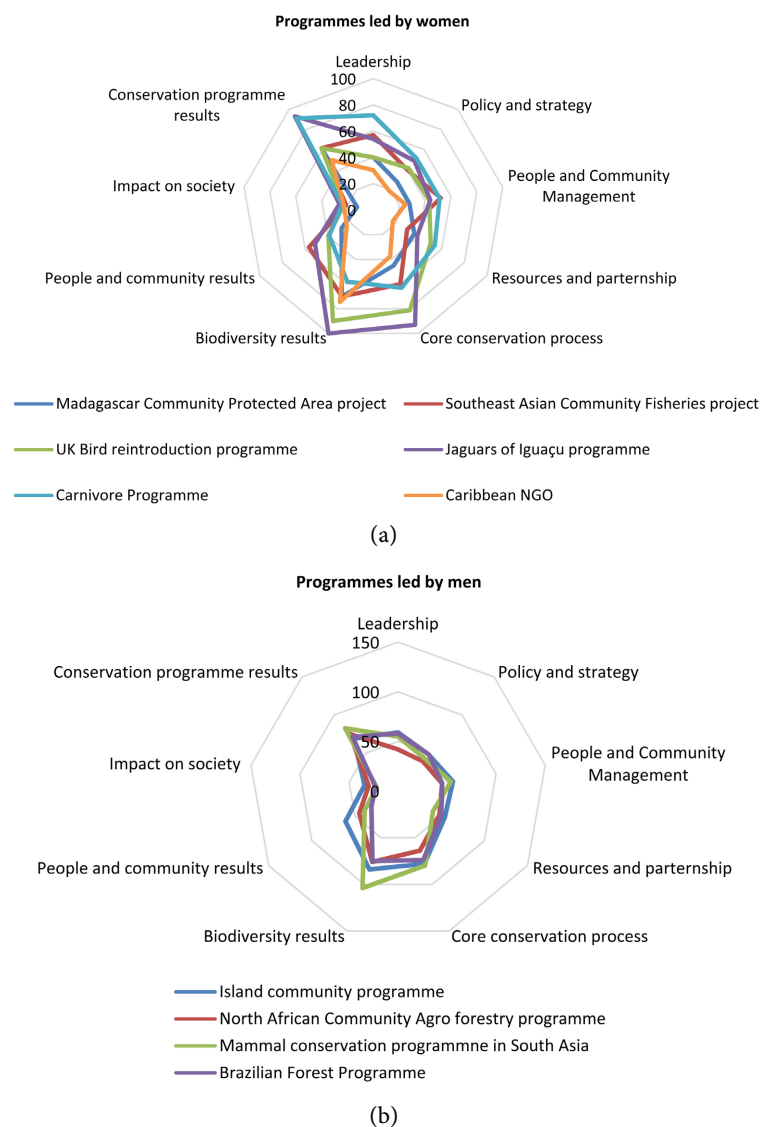


Figure 2. Comparisons radar charts of overall Conservation Excellence Models (CEM) scores of (a) the female-led conservation programmes and (b) the male-led conservation programmes.

4. Discussion

4.1. Conservation Programmes and Their Effectiveness

The Jaguars of Iguazu can be classified as a well-established programme that has been achieving positive results for jaguar conservation in Brazil and Latin America, with WWF citing it as one of the most important programmes of the Jaguar Strategy 2020–2030 initiative. In particular, Jaguars of Iguazu Programme has an interesting preceding history that contributed it to achieving a higher than usual CEM score (for an otherwise young programme). Previous activities focused on scientific methods, building a strong set of practices; however, recent years' results were improved once the programme had incorporated local communities' practices. Human-Wildlife-Coexistence and engagement has become one of the main areas of the programme added to its previous scientific scope. The ability to learn from previous experiences contributed to the programme achieving a notably high score. Comparison with other conservation community-based programmes reveals that the highest scoring programmes (Jaguars of Iguazu and Island Community) shared some important practices such as the development of strategic planning, the implementation of theory of change (ToC) and thirdly, the engagement of local communities.

Strategic planning is considered one of the management tools widely used by different conservation organisations, including NGOs (Aborass, 2021). This tool enables correct scoping of the organisations' objectives and actions (Aborass, 2021). Planning also contributes to identifying potential issues or challenges in implementing conservation activities during the initial stages, which helps to deal with the unpredictable scenario in which a conservation project operates (Black, 2018). From the CEM perspective, the development of strategic planning reflects directly on the "Core conservation process" criterion, since it enables the identification of the main processes, the implementation of a monitoring and review system and consequently the improvement of conservation outcomes. In the case of the Jaguars of Iguazu Programme, the implementation of strategic planning at the beginning of the programme's reformulation was crucial to define the programme's new approach (involving the community directly), and the main actions to be developed in the long term. The Jaguars of Iguazu Programme leader herself also emphasised the importance of strategic planning for building partnerships. The involvement of different stakeholders was a common characteristic shared by both the Island Community programme and the Jaguars of Iguazu programme. Engaging in planning activities can positively impact members' abilities to understand the objectives of the programme and contribute towards the main conservation outcome. In contrast, the lack of strategic planning is mentioned by Catalano et al. (2019), as one of the causes of the failure of conservation organisations. In addition, planning without considering the complexity of conservation context and actors can lead to misjudging conservation issues or the implementation of misguided solutions (Larrosa et al., 2016). Considering this, strategic planning can improve the organisation's effectiveness

since it provides a better understanding of short-term aims, long-term vision, and anticipation of problems (Aborass, 2021).

Both the Jaguars of Iguazu Programme and Island Community Programme have been implementing theory of change (ToC), a tool that can be used in different contexts such as illegal wildlife trade and local communities' involvement (Biggs et al., 2017). The ToC identifies the activities developed and implemented and the desired outcomes, identifying each step of the process (CMP, 2020). With the application of ToC it is possible to establish a link between conservation activities and their outcome (CMP, 2020). In addition, Jaguars of Iguazu programme also follows the Open Standards for the Practice of Conservation, which describes best practices for the successful implementation of conservation projects, oriented around a five-step management cycle: assess, plan, implement, analyse and adapt, share (CMP, 2020). This tool enables the improvement of conservation practice and can be used in programmes regardless of scale, location, or lifecycle (CMP, 2020). Both practices are complementary and help to generate information, and enable monitoring of each stage, rather than just the final outcome.

The development of conservation projects often requires the participation of local communities and stakeholders, a practice that has become increasingly common (Butler et al., 2018; Opfer & Black, 2019; Chesney, 2021; Amavasee et al., 2022). Social aspects that affect the outcome of conservation programmes, such as cultural values, local beliefs, and local customs need to be identified in each different context (Butler et al., 2018). The engagement of local communities in conservation programmes requires the identification of the main influences on participation and, according to Sterling et al. (2017) is based on a relationship of "trust, reciprocity, exchange and respect".

Community engagement practices range from passive information sharing (e.g. through advertising campaigns) to practices where community partners actively participate in the process, such as the adoption of participatory approaches (Sterling et al., 2017). Jaguars of Iguazu Programme, for instance, develops citizen science projects where members of the local community work to protect the park's forest areas and disseminate information about jaguar conservation. The Island Community Programme has been offering support by establishing livelihood initiatives, improving farmers access to markets that can increase their outcomes, and developing innovative engagement techniques such as music and sports practices (football), achieving positive support and engagement of local people. According to our analysis, both projects seem to be able to identify the factors that motivate local communities' participation, seeking to integrate them into the scope of the project, which according to Sterling et al. (2017), can promote positive results in terms of changes in behaviour and engagement.

For the Jaguars of Iguazu Programme, conflict between people and jaguars, often involving retaliatory killings, has a hugely detrimental effect on biodiversity, but also affects the livelihoods of local communities. Management and public

engagement practices should act upon the factors which reduce levels of conflict between wildlife, the community and conservation professionals (van Eeden et al., 2021), an area in which female leaders can be particularly effective (Westermann et al., 2005). Jaguars of Iguazu Programme promotes regular monitoring of the farms adjacent to the park, providing support with anti-predation measures, as well as further awareness-raising on the importance of jaguars for conservation to help reduce cases of predation. Additionally, the programme promotes adoption of other sources of income besides cattle breeding. With a different approach, the Global Carnivore programme has been dealing with human-wildlife coexistence by implementing law enforcement to prevent illegal trade and snaring/trapping and habitat management (for prey to coexist with livestock).

On the other hand, according to Catalano's et al. (2019) review, problems with stakeholders (including local communities), such as lack of trust, corruption, opposition to conservation practices, has been ranked as the most frequent cause of failure of conservation projects. To address this, the development of effective engagement practices requires, for example, the establishment of long-term relationships based on mutual commitment, clear communication, and the identification of local community requirements (Sterling et al., 2017). In addition, it is also important that the community is incorporated in the early stages of project development and that the costs of developing these practices are taken into consideration (Sterling et al., 2017). There is a wide range of strategies, collaborative approaches (Springer, 2009) and local community engagement in the decision-making process (Pretty & Smith, 2004; Cromberg et al., 2014), which can provide positive conservation outcomes, since they promote empowerment and offer an opportunity where local communities can emphasise their needs and aspirations.

Despite the strong community-oriented bias in most programmes assessed in this study, the CEM has revealed those programmes' lack of understanding of how the work has been impacting local communities and how local people can contribute to increasing biodiversity. The challenge lies in the fact that there are often a number of components affecting the biodiversity results, making data collection difficult and adding levels of complexity (Baylis et al., 2016). Furthermore, factors such as timescale (i.e. results can only be observed after a certain period of time) can hinder the process, as well as lack of data (Young et al., 2013) and monitoring being delayed until after activity is undertaken (Roe et al., 2015). It is also important to emphasise that the lack of financial resources in conservation is a common problem, which can make the development of monitoring activities unfeasible. Although there are challenges, the Island Community Programme has made progress by establishing a communications strategy that engages local people. Understanding both the social and the biological components of a conservation programme can influence the planning process and consequently improve organisation effectiveness (Catalano et al., 2019).

4.2. Leadership in Conservation

Women and men can display different leadership skills (Tenouri, 2020), making it important to understand the main contrasts and similarities. This analysis of ten conservation programmes identified the most common characteristic used to describe leaders (both female and male) as commitment and/or dedication. Commitment is a common characteristic in leaders working in the conservation field (Evans et al., 2015; Loffeld et al., 2022a) and links with the “passion for nature” identified by Englefield et al. (2019) as the most recognised characteristic of conservation leaders and also considered in the CEM leadership criteria (Black, Groombridge, & Jones, 2011).

From the comparative analysis, we were able to identify three qualities from the Black, Groombridge and Jones (2011) model that were more common among both men and women, which can be classified into three main areas: “organisational vision”, “shared responsibility”, and “partnership building”. The ability to “Establish a stable, shared long-term vision and a common sense of purpose” is common to all the projects that were evaluated and highlights the central role of the leader in defining the vision of the organisation and their ability to communicate it (Black, Groombridge and Jones 2011). This observation corroborates the studies of Englefield et al. (2019) and Bruyere (2015) that highlighted “establish a shared vision” as an important leadership quality. In the case of the Jaguars of Iguazu Programme, the leader plays an important role in establishing a clear purpose of the organisation, an achievement that was possible through the development of Strategic Planning. The leader had demonstrated a good set of skills to develop strategic planning such as experience and knowledge about the tool, contributing to a well developed plan. According to Webb et al. (2022), implementing a unified vision in the organisation is considered in many accounts (54% of 59 articles in a systematic review of conservation leadership) as an important step to achieving effective conservation outcomes. Webb et al. (2022) also point out that the establishment of an organisation’s vision is based on the definition of the vision itself and on sharing this vision with other members and stakeholders. Considering that, the organisation’s vision plays an important role, since it helps to define the work and the actions which will require collaboration and engagement of stakeholders (Webb et al., 2022).

Another characteristic identified is the ability to “Place responsibility and control of information in the hand of people who do the work” (Black, Groombridge, & Jones, 2011). A leader needs to be able to identify the competencies of each team member, be able to delegate work, and sharing decision-making responsibility with those who work on the ground (Black, Groombridge, & Jones, 2011). In this sense, it is also important that the leader actively empowers the team, enabling them to develop and improve their work (Black, 2019). While Jaguars of Iguazu Programme has a small team, in which there is only one leader who delegates the work according people’s roles and skills, the Global Carnivore Programme has a leadership hierarchy. However, both leaders are able to dele-

gate work to project workers on the ground. Shared responsibility and empowerment reduces a leader's workload or allows a leader's role to be expanded, enabling reliance on more than one person (Sterling et al., 2017).

Finally, another characteristic identified was the ability to "Create an attitude of cooperation with partners, sharing information to improve the work", which highlights the importance of creating partnerships to conduct the work, and share information (and consequently good data management). With regard to partnership-building, all the projects evaluated had good CEM scores, suggesting that being able to develop partnerships was an important quality identified in conservation leaders (Bruyere, 2015). According to the Webb et al. (2022) review, 80% of the articles on conservation leadership highlight the ability to engage different stakeholders in order to bring new solutions as an important characteristic. Another study similarly showed that support from local communities and stakeholders was important for the success of mammalian recovery projects, contributing to improving the conservation outcomes (Crees et al., 2016). In the case of the Jaguars of Iguacu Programme, the development of strategic planning helped to build new partnerships and good relationship maintained by the leader and the team. The positive results of Jaguars of Iguacu Programme in this area were based on the renewal of important contracts and long-term partnerships. Although most of the projects evaluated have a wide partnership network, it was not possible to identify if all had an established useful information-sharing systems with partners. The generation and sharing of information are other aspects of conservation projects that can present challenges to the organisation.

4.3. Gender and Leadership

Although there are similarities, the female led programmes which were evaluated had a higher score compared to male-led programmes (Figure 2). This may be due to the sampling effect, in which programmes that women feel confident enough to be evaluated are the ones in which women are good leaders, and consequently, the programme has good results. The Global Carnivore programme formed in 2007 has the highest leadership score, in which the senior female leader has experience aligned with a strong scientific background, providing a high level of support and working with a very broad scale which is not common among conservation programmes. While the Global Carnivore Programme leader has extensive knowledge about the focal species (which are the focus of the programme), the Jaguars of Iguacu programme leader does not have a background focused on big cats.

The legacy left by the previous programme (Carnivores of Iguacu) can be seen not only in the establishment of good scientific practices but also in terms of leadership. The previous male leader was internationally well-known for his work with jaguars, which contributed to place the program in the jaguar conservation scenario, attracting partnerships with universities and NGOs. In this case, the new female leader had to be inserted into a new context, representing a challenge. However, despite the lack of knowledge about the species (jaguar), the

leader demonstrates a strong understanding of project planning and community engagement, which was a key factor contributing to positive conservation outcomes (Aborass, 2021). In addition, the female leader had received important contributions from the first male leader, who is considered an external advisor.

By contrast within the sampled programmes, the Caribbean NGO (created in 2010) led by a woman has the lowest score due to the lack of organisational structure, consistency and clarity of roles and resources. Although the highest leadership score was identified in female leadership programmes, the highest overall programme score is from a male programme. The male leader of the Island Community Programme has a sense of accomplishment, clear knowledge about members' roles, and finally, established a system to monitor staff performance. Among all 10 programmes evaluated, these approaches were only identified in two programmes, both male-led.

Notably, women and men in leadership showed different leadership qualities. Women are characterised as “Hands-on leadership”, while men emphasised “Training opportunities”, when reviewed against the Black, Groombridge and Jones (2011) model. The “Hands-on leadership” quality implies that women are highly involved in the different project areas and day-to-day activities, working closely with their staff. In addition, it also implies an understanding of teamwork and knowledge about the staff member's skills (Black, Groombridge, & Jones, 2011).

The most frequent terms used to define female leadership in these conservation programmes were “highly involved” and “hard worker”. This finding is important since the CEM assessment is informed by the views of followers (staff) and stakeholders (partners, communities, etc) as well as the perception of the leaders themselves. These results corroborate the findings of Painter-Morland (2011) suggesting women demonstrate charisma and hard work, in their leadership roles. In contrast, men in these programmes were portrayed as ones who “Give people the opportunity to ask for training and provide it on a just-in-time basis”. In this case, men are more willing to provide opportunities for staff to build the capacity in a correct and reliable timeframe. Training offers opportunity to gather information, contributing to improvement of work, motivation of workers and their understanding of organisational purpose and values (Park & Kim, 2016), so increasing a sense of empowerment (Voegtlin, Boehm, & Bruch 2015).

Using a different perspective, the contrast between women and men, noted against the Black, Groombridge and Jones (2011) model, can be considered in the light of the transformational leadership model. Kouzes and Posner (2012) established the following five leadership practices: model 1) Model the Way, 2) Inspire a Shared Vision, 3) Challenge the Process, 4) Enable Others to Act, 5) Encourage the Heart. Based on this model, men's preferred approach to “Training opportunities” can be associated with “Enables others to act”, since the leadership role is defined by “foster collaboration, build trust, and create spirited teams”, in which members abilities are strengthened (Kouzes & Posner, 2012).

In contrast, women's leadership style "Hands-on leadership" can be interpreted as "Model the Way", based on the "principles concerning the way people should be treated and the way goals should be pursued", where members have an example to follow (Kouzes & Posner, 2012). However, following these practices alone may not lead to positive results. "Model the way" can be over controlling. For example, Jaguars of Iguaçu programme leadership style can be defined as "Model the way", in which the leader follows all the daily activities of the programme, having a high level of personal involvement and controlling of main operations. These characteristics may result in the leader accumulating a higher amount of work, which may not be sustainable in the long run. On the other hand, "Enable Others to Act" has to be aligned with members' needs, otherwise, it will lead to disenchantment and to disinterested staff and will erode their motivation to take more responsibility. Lack of staff motivation was one of the characteristics identified in the North African Community Programme led by a man.

4.4. Challenges for Female Leaders

Although women leaders may exhibit the "Model the Way" leadership principle, according to our analyses, women were not described as role models. In general, only men were described as role models. One possible explanation is that, according to Appelbaum et al. (2003), the way we view leadership is guided by the role we expect a person to play in society, according to their gender. In this sense, although it is established that leadership has no gender, leadership roles are more often associated with and dominated by men (Ayman & Korabik, 2010). That emphasises the important role that gender plays in how we define good leaders, in which men can seem more adequate for leadership than women, which can lead to a negative impact on women in leadership (Eagly & Karau, 2002). Women and men in leadership roles may achieve different outcomes since men are in a more privileged position, while women in leadership positions are not seen as appropriate due to their expected role in the society. It is also important to point out that leadership is about both the leader themselves and the wider context in which they work. For example, female leaders can be seen as less effective in a male context (Eagly, Karau, & Makhijani, 1995), and while another research found that there is a male leader preference among almost half of the surveyed participants (Elsesser & Lever, 2011). Regardless of a women's set of skills and educational background, females still will be less noticed as role models compared to male counterparts (staff, peers, partners). As such, female leaders appear to need to dedicate more effort than men, in order to be recognised as effective leaders (Lyness & Heilman, 2006).

In the context of conservation, there is a lack of women in leadership roles, emphasising the lack of representation and possibly infers the concept that women are not qualified to assume powerful positions (Mendelberg & Karpowitz, 2016). A study points out that the lack of women in different organisations around the world is increased by later career stages as senior positions, in which women occupied less than 1/3 of senior positions (Giakoumi et al., 2021). In ad-

dition, as women and men have different perspectives and backgrounds, excluding women from conservation may lead to a context where female viewpoints are not considered (James, 2021).

In fact, women can face different barriers to work within environmental conservation. The challenges can range between direct barriers, preventing women from working or indirect, when women are seen as not suited to the position (Jones & Solomon, 2019). For example, lengthy work hours and a lack of a fixed work schedule may offer greater obstacles to women (particularly those with children), impacting their decision to pursue this career or possibly limiting their ability to progress in their careers and become conservation leaders (Smith et al., 2012; Loffeld et al., 2022b). In addition, the issues are also connected to informal circumstances, like being excluded from decision-making (James et al., 2021), not being heard, or having their ideas rewritten by males who gain credit (Jones & Solomon, 2019). Furthermore, women may be subjected to sexual harassment and discrimination, and they may be hesitant to report the event due to a lack of support and fear of reprisal (Jones & Solomon, 2019). Another barrier is the lack of training and mentorship for women in conservation, which may prevent them from improving skills and personal development and receiving less advice about career development (James, 2021).

5. Conclusion

Despite the current imbalance predominating leadership gender in conservation organisations, gender-diverse leadership itself would bring positive outcomes. While men in leadership perhaps improve time management in their organisations, women appear to provide a deeper and more introspective analysis. The gender divide in decision-making practice also suggests that women prefer to make decisions based on available knowledge, which results in a better-informed conclusion but takes longer whilst men tend to rush their decisions (the latter demonstrating confidence while also taking greater risks, perhaps helpful in conservation crisis situations). Women would, however, appear to have a broader perspective, whereas males follow a more limited perspective, focusing on one topic at a time; a more diverse leadership base can improve problem-solving. Additionally, female leaders can improve conflict resolution and data management. Clearly, on balance, a diverse gender environment can bring positive outcomes for conservation organisations and increase effectiveness. However, more studies are required to point out strategies that can promote women's inclusion in powerful positions within the conservation sector and specifically create a greater understanding of the leadership challenges faced by women of colour.

This current study highlights: 1) the importance of management practices related to monitoring and evaluation, not only of biological results but also of the engagement of local communities, contributing to achieved long-term results, 2) the importance of the set of leadership skills and the similarities and differences

between women and men leaders, 3) the inclusion of women in conservation, which can bring positive results and promote an inclusive leadership. To sum up, all these three aspects can contribute to improving organisational effectiveness as mentioned in previous sections. Finally, this study also contributes to moving forward the debate about leadership, gender and conservation outcomes in a scenario where research is scarce, advocating for more diverse and inclusive leadership in conservation organisations aimed to achieve not only gender but also positive biodiversity results.

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Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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