

Understanding the extension capacity needs of the CapeNature Stewardship Programme in the Western Cape Province of South Africa.

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Abstract

There is an increasing call for conservation programmes to provide sound evidence of effectiveness, and employing empirical evaluations can assist in the transition to evidence-based conservation practices. The objectives of this research were to develop a logic model for the CapeNature Stewardship Programme which would articulate the programme's theory of operation with respect to its Stewardship Programme landholders. The second major objective was to develop psychometric instruments for assessing the motivations and satisfactions of the programme's stewardship landholders. Both objectives included the aim to provide robust and repeatable instruments for exploring landholder's psychology, and developing a programme's theory of operation to understand the programme and improve with understanding the needs of the landowners. In this regard the processes and methodologies employed represent a major component of this research. A mixed methods approach was utilized, including stakeholder and volunteer surveys, conducted via mailing hardcopies and the internet, together with three focus groups held with the programme's management, extension staff and the stewardship landholders. Analysis of the data thus collected included both qualitative and quantitative approaches, specifically coding and content analysis, together with statistical tests of internal consistency, factor analysis and doubling correspondence analysis. Robust indices for example validity and internal consistency were developed for assessing landholder's satisfaction with extension and level of satisfaction with the stewardship programme (Babbie 2007). These indices revealed that landholders in the

Stewardship Programme are not satisfied with the programme, and exhibit behaviours suggesting they act as advocates for the programme. Demographic data and additional information provided further insights into the programme. The development of a method for articulating the programme's theory of operation is represented, together with four logic models which graphically illustrate this theory. This process and theory allowed for recommendations to be provided for the programme's improvement. A platform for adaptive management and further evaluations of this, and similar programmes, represents a major outcome of this research, understanding the extension capacity needs for the conservation of biodiversity in the CapeNature Stewardship Programme to function as a model for improving the implementation of the programme across the Western Cape, South Africa. This research feeds into an evaluation of CapeNature's Biodiversity Stewardship programme and demonstrates the importance of incorporating psychology into conservation interventions.

Supervisor approval

APPROVED BY:

Supervisor: _____

Prof Charlie Shackleton

Declaration

I, the undersigned, hereby declare that the work contained in the thesis is my own original work and that I have not previously in its entirety or in part submitted it at any university for a degree.

Signature: _____

Date: _____

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In dedication, this thesis is for my amazing wife for whom conservation ethics is not a study but who she is, my three sons and my parents. I am forever thankful for your patience and support.

Table of Contents

CHAPTER 1 – INTRODUCTION: EXTENSION AND THE BIODIVERSITY STEWARDSHIP PROGRAMME	12
1.1 Humans Depend on Nature	12
1.2 Protected Areas: The Cornerstone of Conservation	15
1.3 Privately-Owned Protected Areas	20
1.4 Extension Services	22
1.5 The Biodiversity Stewardship Programme, Western Cape Province, South Africa	24
1.5.1 Conservancies - Introduction to Stewardship	25
1.6 A Personal Perspective	28
1.7 Aim and Objectives	30
CHAPTER 2 – THE CAPENATURE BIODIVERSITY STEWARDSHIP PROGRAMME AND ITS OPERATIONS	33
2.1 The Functioning of the BSP	33
2.2 Introduction to Logic Models	37
2.2.1 What is a logic model?	37
2.2.2 Methods	38
2.3 Document Analysis	40
2.3.1 What is a Document Analysis?	40
2.3.2 Methods	41
2.3.2.1 Determining inclusion criteria for documents	42
2.3.2.2 Collecting documents	43
2.3.2.3 Articulating key areas of analysis	43
2.3.2.4 Document coding and verification	44

2.3.2.5 Analysis	46
2.3.3 Results	47
2.4 Focus Groups	52
2.4.1 What is a focus group?	52
2.4.2 Methods	52
2.4.2.1 Selecting participants	52
2.4.2.2 Facilitating the focus group	54
2.4.2.3 Data capture	58
2.4.2.4 Data analysis	58
2.4.3 Results	59
2.5 Discussion – The Logic Model	69
 CHAPTER 3 – LANDHOLDER PERSPECTIVES ON CONSERVATION STEWARDSHIP AND EXTENSION SERVICES	 73
3.1 Introduction	73
3.2 Methods	77
3.2.1 The Study Area	77
3.2.2 Selecting participants	80
3.2.3 The Survey Instrument	81
3.2.3.1 Psychometric theory	81
3.2.3.2 Questionnaire design	82
3.2.3.3. Interviews and Survey Delivery	84
3.2.4 Psychometric analyses	85
3.3 Results	87
3.3.1 Landholders Demographics	87
3.3.2 Motivations for Joining, and Satisfaction with, the BSP	87

3.3.2.1 Motivations	87
3.3.2.2 Benefits	90
3.3.2.3 Satisfaction	92
3.3.3 Findings on Landholder's Attitudes Towards Extension Services	95
3.3.3.1 Landholder Satisfaction	95
3.3.4 Willingness-to-sell	100
3.4 Discussion	100
3.4.1 Landholder Motivations and Satisfaction	100
3.4.2 Role of the Extension Officer	102
3.4.3 Prioritising Investments in Extension Support for Landholders	104
3.4.4 A Systemic Approach to Managing Extension Support	105
3.4.5 Financing the BSP	108
3.4.6 Improving the Research	108
3.4.7 Moving Forward into the Future	110
3.4.8 Conclusions	112
 CHAPTER 4 – CONCLUSION & RECOMMENDATIONS: EXTENSION CAPACITY NEEDS OF THE BIODIVERSITY STEWARDSHIP PROGRAMME	 113
4.1 Key Barriers and Recommendations	113
4.1.1 Internalising stewardship programme in CapeNature	113
4.1.2 No explicit career pathing for extension	114
4.1.3 Landowners expectations differ from senior management in CapeNature	116
4.1.4 Lack of well-trained extension capacity in stewardship programme limits protected area expansion	118
4.1.5 Internal and external legal processes takes too long	120

4.1.6 Research gaps in decision making in the BSP.	121
4.1.7 Refine the optimal instrument mix to match existing needs.	123

LITERATURE CITED	130
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APPENDICES

APPENDIX 1: – LOGIC TABLE DEVELOPED DURING FOCUS GROUP ONE SUPPORTING THE CAPENATURE BIODIVERSITY STEWARDSHIP PROGRAMME LANDHOLDER LOGIC MODEL	138
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APPENDIX 2: – LOGIC TABLE DEVELOPED DURING FOCUS GROUP TWO SUPPORTING THE CAPENATURE SENIOR MANAGEMENT STAFF LOGIC MODEL	142
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APPENDIX 3: – LOGIC TABLE DEVELOPED DURING FOCUS GROUP THREE SUPPORTING THE CAPENATURE BIODIVERSITY STEWARDSHIP PROGRAMME EXTENSION STAFF LOGIC MODEL	145
--	------------

APPENDIX 4: KEY EVENTS IN THE HISTORY OF THE CAPENATURE STEWARDSHIP PROGRAMME	148
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APPENDIX 5: PEOPLE INVOLVED IN THE CAPENATURE BIODIVERSITY STEWARDSHIP PROGRAMME STATUS DENOTES INVOLVEMENT IN THE bsp AT THE TIME OF COMPLETION OF THE FOCUS	154
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APPENDIX 6: – QUESTIONNAIRE IN ENGLISH	158
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APPENDIX 7: – CAPENATURE BIODIVERSITY STEWARDSHIP BROCHURE (IN ENGLISH)	179
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CHAPTER 1 – INTRODUCTION:

EXTENSION AND THE BIODIVERSITY STEWARDSHIP PROGRAMME

1.1 Humans Depend on Nature

Global biodiversity, defined as the variability among living organisms from all sources, terrestrial, marine and other aquatic ecosystems (Millennium Ecosystem Assessment, 2015), is estimated to be around 8.7 million species (UNEP, 2011).

An ecosystem is characterized by its collection of species, the physical environment in which the species live, and the sum total of their interactions, with each other and with their shared environment. Tropical rainforests, coral reefs, and freshwater marshes are examples of ecosystems. The Earth's ecosystems provide goods and services that sustain all life on this planet, including human life. Tragically, humanity often takes these services, delivered free of charge, for granted.

Global biodiversity is being lost at a rate many times higher than that of natural extinction due to land conversion, unsustainable harvesting of natural resources and the introduction of invasive alien species, climate change, and pollution (Millennium Ecosystem Assessment, 2015). Global biodiversity is

under considerable threat from human activity, over half of the 14 biomes assessed by the Millennium Ecosystem Assessment (2015) have experienced a 20-50% conversion to human use and current extinction rates are calculated to be 1,000 times greater than the typical background rates through Earth's history. Thousands of South Africa's species and a third of the country's ecosystems are under threat and without action will accelerate and negatively impact livelihoods, agricultural production and food security in the future (WWF Report, 2015).

Humanity is currently exceeding the threshold that is considered a safe operating space for people and the biosphere and exceeding some important ecological boundaries for survival. The current nature and scale of economic activity has already surpassed biophysical thresholds (Hounig 2013).

As a consequence environmental, economic and social systems become increasingly more difficult to manage with proposed solutions often creating unforeseen new management problems and costs (Rittel & Webber, 1973). The crossing of natural survival boundaries that result in biodiversity loss, ecological dysfunction and consequent impacts to human lives and economies demands a shift in perspective on the debate of how global conservation goals should be set, who's responsible for achieving them, and what practical mechanisms for conserving biodiversity are appropriate and likely to be most effective (Hounig, 2013)

Ecosystem services are benefits humans obtain from the natural world (Millennium Ecosystem Assessment, 2015) and are divided into four categories - provisioning, regulating, cultural and supporting services. Provisioning services are those elements of ecosystems that provide food, water and timber; regulating services control climate, floods, disease; cultural services provide recreation, aesthetic enjoyment and spiritual fulfillment; and supporting services refer to processes such as soil formation and photosynthesis.

Biodiversity is a vital constituent of all four types of ecosystem services and its loss has the potential to substantially hamper the functioning of ecosystems and therefore their ability to deliver the benefits upon which humans rely for their well-being.

Nature and humans have always interacted throughout history, and the interaction of these two entities has evolved as a series of demands that humans have placed on nature to survive and advance. By contrast, a relatively small minority of people have questioned the state of human's relationship with nature and tried to determine how humanity and nature can interact and develop together. Conservation is one discipline whose proponents have aimed to balance the mutual needs of humans and nature.

The eminent Harvard University biologist, Professor Edward O. Wilson, once said about ants, "We need them to survive, but they don't need us at all." The same, in fact, could be said for other insects, bacteria, fungi, plankton, plants,

and animals. This fundamental truth, however, is largely lost on many people. Rather, we humans often act as if we are totally independent of nature, as if our driving thousands of other species to extinction and disrupting the life-giving services they provide will have no effect on us whatsoever.

1.2 Protected Areas: The Cornerstone of Conservation

Protected areas are currently one of the most important conservation mechanisms available. The global and local protected area network has grown substantially in recent decades, and now occupies 11.5 % of the Earth's land surface (Watson et al. 2015), but such growth has not been strategically aimed at maximizing the coverage of global biodiversity. The current global network is far from complete, even for representation of terrestrial vertebrate species. The expansion of key global protected area networks is urgently needed to prevent the loss of unique biodiversity, especially in biodiversity 'hotspots', such as the Cape Floristic Region (Mittermeier et al. 2004).

Originally developed and conceived to conserve iconic landscapes and wildlife, the role of protected areas has evolved recently to an increasingly diverse set of social, conservation and economic objectives. The number of land and sea areas designated as protected areas has increased globally over the past century, but there is still a major shortfall of political commitments to enhance the coverage and effectiveness of these areas. Financial support for the effective management of these areas is dwarfed by

the benefits they provide, for example, provision of clean and plentiful water, and these returns depend on effective management.

Target 11 of the Aichi Biodiversity Targets outlined in the Convention on Biodiversity's Strategic Plan for Biodiversity 2011-2020 aims to conserve 17% of terrestrial and inland water areas globally by 2020 (CBD Secretariat, 2010). This target is in fact likely to be met but there are considerable problems with protected area networks remaining ecologically unrepresentative, biased towards remote places or other areas unsuitable for commercial activities and many critical sites for biodiversity remain poorly conserved (GBO4, 2014). Although protected areas alone are not adequate for nature conservation they are the cornerstone on which regional strategies are built and should represent the biodiversity of each region as well as separate this biodiversity from processes that threaten its persistence (Margules and Pressey, 2000).

A protected area has been defined by the International Union for Conservation of Nature (IUCN) as "A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values." Although the use of IUCN categories by countries is voluntary, its use has been supported by the IUCN membership through a formal resolution (WCC-2012-Res-040-EN: Endorsement and uniform application of protected area management guidelines) and a decision of the CBD (e.g. Decision VII/28 which recognized 'the value of a single international classification system for protected areas...').

Keeping natural ecosystems intact both within and beyond formal protected areas helps to ensure continued provision of crucial ecosystem services and to sustain South Africa's ecological infrastructure, without which sustainable development could not occur (Biodiversity Stewardship Policy Document 2010). This is also essential for South Africa and the region to achieve its explicitly-stated conservation goals per the National Environmental Management (Biodiversity) Act (NEMBA 2004). The South African National Protected Areas Expansion Strategy (NPAES 2010) details a vision for expanding protected areas on public and private land (NPAES 2010).

Table 1: International Union for Conservation of Nature (IUCN) protected area categories and descriptions (IUCN Website, 2017).

	Category	Description
Ia	Strict nature reserve	Strictly protected for biodiversity and also possibly geological/ geomorphological features, where human visitation, use and impacts are controlled and limited to ensure protection of the conservation values
Ib	Wilderness area	Usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, protected and managed to preserve their natural condition
II	National park	Large natural or near-natural areas protecting large-scale ecological processes with characteristic species and ecosystems, which also have environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities
III	Natural monument or feature	Areas set aside to protect a specific natural monument, which can be a landform, sea mount, marine cavern, geological feature such as a cave, or a living feature such as an ancient grove
IV	Habitat/species management area	Areas to protect particular species or habitats, where management reflects this priority. Many will need regular, active interventions to meet the needs of particular species or habitats, but this is not a requirement of the category
V	Protected landscape or seascape	Where the interaction of people and nature over time has produced a distinct character with significant ecological, biological, cultural and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values
VI	Protected areas with sustainable use of natural resources	Areas which conserve ecosystems, together with associated cultural values and traditional natural resource management systems. Generally large, mainly in a natural condition, with a proportion under sustainable natural resource management and where low-level non-industrial natural resource use compatible with nature conservation is seen as one of the main aims

Governance types	Governance by government			Shared governance		Private governance			Governance by indigenous peoples and local communities		
	Federal or national ministry or agency in charge	Sub-national ministry or agency in charge	Government-delegated management (e.g. to an NGO)	Transboundary management	Collaborative management (various forms of pluralist influence)	Joint management (pluralist management board)	Declared and run by individual landowner	...by non-profit organizations (e.g. NGOs, universities, cooperatives)	...by for-profit organizations (e.g. individual or corporate landowners)	Indigenous peoples' conserved areas and territories – established and run by indigenous peoples	Community conserved areas – declared and run by local communities
Protected area categories											
I a. Strict Nature Reserve											
I b. Wilderness Area											
II. National Park											
III. Natural Monument											
IV. Habitat/Species Management											
V. Protected Landscape/Seascape											
VI. Managed Resource Protected Area											

Figure 1: The IUCN protected area matrix: a classification system for protected areas using both management category and governance type (IUCN Website, 2017). Definitions are as follows: *Governance by government* - Federal or national ministry/agency in charge; sub-national ministry/agency in charge; government-delegated management (e.g. to NGO). *Shared governance* - Collaborative management (various degrees of influence); joint management (pluralist management board; transboundary management (various levels across international borders). *Private governance* - By individual owner; by non-profit organisations (NGOs, universities, cooperatives); by for-profit organisations (individuals or corporate). *Governance by indigenous peoples and local communities* - Indigenous peoples' conserved areas and territories; *Community conserved areas* – declared and run by local communities.

1.3 Privately-Owned Protected Areas in South Africa

A privately-protected area (PPA) is a protected area – as defined by the IUCN – under private governance, i.e. individuals and groups of individuals; non-governmental organizations (NGOs), corporations (both existing commercial companies and sometimes corporations set up by groups of private owners), research entities like universities, field stations or religious entities (Stolton et al. 2014).

Much of the biodiversity in South Africa that is critical to conserve, including our most threatened ecosystems and providers of ecosystem services, is situated on private or communally-owned land (estimated at 80%), and is often under substantial pressure from competitive resource users such as the agricultural and mining sectors. It is often not feasible or politically acceptable for stakeholders in South Africa to expand protected areas through acquisition of land (Biodiversity Stewardship Policy Document 2010).

One of the objectives of the National Environmental Management Protected Areas Act (2003) (NEMPAA) is to provide for a representative network of protected areas on state land, private land and communal land. NEMPAA recognizes a streamlined set of categories for Protected Areas and details the legal procedure for declaring Special Nature Reserves, Nature Reserves, National Parks, and Protected Environments. The protection of private and communal land is specifically catered for under these categories. It requires a mutual agreement between landholders and the National Minister of the

Environment or Member of the Executive Council (MEC) (depending on the category of protected area).

The expansion of protected areas on private land is currently limited by a number of factors, including budget constraints, organizational priorities, and subsequently, the number of staff dedicated to the maintenance of Biodiversity Stewardship sites (my personal experience). Ensuring the effective operation of the Biodiversity Stewardship Programme (BSP) is essential for achieving conservation goals and ensuring effective relationships between landholders and managers and the programme. A fine-scale understanding of the BSP, and the attitudes of landholders and CapeNature staff is fundamental to securing the implementation of an effective Biodiversity Stewardship programme in the Western Cape province of South Africa. This will not just secure Critical Biodiversity Areas, a legally-recognised land-use planning category, but will also establish well-managed areas with collaboration through effective extension and landholders.

Informal discussions with staff from CapeNature, of which the candidate was one, indicated concern regarding the potential negative attitudes of landholders towards the agency as identified by anecdotal reports from a number of programme staff. These formed the basis of the research presented in this thesis, as a pre-existing benchmark of landholder attitudes did not exist. The research conducted observations, identified themes and common categories and analysed patterns in people and management processes using a refined grounded theory approach. The grounded theory

approached allows the researcher to be scientific and creative at the same time (Babbie, 2004).

Despite the finding that the costs of the BSP are lower than anticipated (von Hase et al., 2010), CapeNature does not have the financial resources and capacity to implement its expansion plan in its entirety. There are substantial concerns and anecdotal reports of dissatisfaction from CapeNature staff and stewardship landholders (my personal experience). Most of this dissatisfaction was hypothesized to stem from several causes, including:

- Delays during the process of formally enrolling lands;
- The reported amount of communication from CapeNature;
- The support landholders receive through extension staff from CapeNature.

Due to regular budget cuts over successive years to the BSP it has been important to assess these matters through research to prevent a declining return-on-investment by CapeNature and representation of biodiversity within the privately-protected area network.

1.4 Extension Services

Extension refers to services that provide landholders with the information and skills they need to improve their land stewardship practices (Root Capital, 2015). This is usually through the application of scientific research and

knowledge to stewardship practices through landholder education – the delivery of information inputs to landholders (Anderson and Gershon, 2007).

Extension services can be classified into three types: 1) technology transfer, 2) advisory and 3) facilitation (Beyon et al, 1998) and has traditionally focused on improving agricultural productivity through transfer of technology using a top down approach from government agencies to landholders (Agriculture for Impact, 2016). This model has shifted in recent times towards greater involvement of other actors in the landscape, including agribusiness companies, NGOs, agro-dealers, producer organisations and farmer-to-farmer exchanges. Many extension services around the world have been contracted out to the private sector and NGOs (World Bank, 2008).

Extension programs are dependent upon the quality and effectiveness of the extension staff both as individuals and collectively which can often determine the success or failure of a programme or project (Oakley and Garforth, 1997). Other key elements for effective extension include: adequate and timely access by farmers to relevant advice, appropriate incentives to adopt new technology, the availability of the improved technology, access to modern inputs and resources and an acceptable level of risk (Anderson and Feder, 2004).

1.5 The Biodiversity Stewardship Programme in the Western Cape Province, South Africa

The Western Cape Province includes three globally recognized biodiversity hotspots the Cape Floristic Region, the Succulent Karoo and the Thicket biome (Mittermeier et al. 2004), with many threatened plant species (Cowling & Pressey 2003). The current protected area network does not adequately protect the majority of ecosystems, species and ecological processes in the Western Cape extents of these hotspots (NPAES 2010). Establishment of additional protected areas to conserve these habitats on privately-owned land is thus essential (Purnell et al. 2010).

CapeNature is the provincial government agency mandated with protecting biodiversity within the Western Cape Province of South Africa. It was established in 1998, through the Western Cape Nature Conservation Board Act (Act of 1998). CapeNature's mission and goals are broad, consisting of a number of programmes for protecting and managing the province's natural environment, including fire management, sustainable economic development, environmental crime, ecotourism, wildlife management and private and public biodiversity stewardship. Western Cape's traditional protected areas are supported by the National Environmental Management Protected Areas Act (NEMPAA), and the Western Cape Nature Conservation Board Act (Act No. 15 of 1998) (Turner, 2012).

1.5.1 Conservancies - Introduction to Stewardship

Between 1990 and 2000, CapeNature identified the need to involve private landholders in off-reserve conservation and started the process of establishing conservancies through cooperative arrangements between individual or groups of landholders and the agency. After 2000, CapeNature adopted a bioregional approach to conservation, which was more consistent with the senior management approach to conservation, and this opened the way for the development of the CapeNature Stewardship Programme and other cooperative programmes with private landholders. The objective of the development of conservancies and the BSP was to share the responsibility of conservation between landholders and government. Such an approach was thought to promote innovation more so than in a state-owned programme where a restrictive approach is common. Costs of conservation could be defrayed between the partners.

Biodiversity stewardship is the practice of effectively managing valued elements of nature including species, ecosystems and the processes that sustain them outside of the existing state-managed protected area system and is regarded as one of the most cost-effective (Pence et al. 2003; Wilson et al. 2007) and feasible (Langholz 1996; Cowling 2010; Knight et al. 2010) mechanisms for protecting important natural systems across the world. It achieves this by placing the responsibility for conserving biodiversity into the hands of private landholders through a variety of legally binding contractual agreements with private landholders identified as owning some of these Critical Biodiversity Areas. Biodiversity stewardship in the Western Cape is

implemented through partnerships and co-operative governance. Biodiversity stewardship provides a mechanism for landholders and managers to protect and restore biodiversity on their properties by entering into agreements with statutory conservation agencies. This requires intensive negotiation and contract maintenance. In order for this conservation strategy to be successful, skilled negotiation and extension staff with both biodiversity conservation and social skills are critical.

There are currently 82 conservancies gazetted in the Western Cape with only a small number still active in the different landscapes in which they operate. Most of the conservancies lack capacity and support from the local authorities to achieve their objectives and mandates in the different landscapes. There is currently a big drive with the different partners engaged in stewardship – CapeNature, Endangered Wildlife Trust, World Wide Fund for Nature – to get all conservancies functioning effectively again. One of the primary reasons is to provide a strong management and extension function in the stewardship context (my personal experience as a CapeNature member of staff).

In 2003, the development of the Biodiversity Stewardship Programme started in earnest, using mapped information on Critical Biodiversity Areas from the Conservation Action for People and the Environment (CAPE) initiative, creating a mechanism that provided incentives for landholders as legal tools that could provide adequate protection for biodiversity for a specified duration of time or in perpetuity. The Conservation Stewardship Programme (CSP) was designed and was trialed as a pilot project executed in three areas in the

Western Cape. The pilot project was concluded in October 2004 and the CSP then became a fully-fledged CapeNature programme.

This triggered an urge for a shift in 2003 from the historically “preservationist” and *ad hoc* approach to the establishment of privately-protected areas (Pressey 1994) where in the past conservation action was focused on conserving dry, remote, steep or inaccessible mountain areas not suited to development such as agriculture, mining, industry or human settlement to a more people-centered approach focused in poorly productive lowland areas (Purnell 2011).

To date almost 54 000 hectares of private land has been conserved through this programme focusing more on the people centered approach working with landowners owning the productive lowland areas (Purnell 2011). Much of the biodiversity that is critical to conserve, including South Africa’s most threatened ecosystems and providers of ecosystem services, is situated on private or communally-owned land, and is often under substantial pressure from competing resource uses (NPAES 2010). It is often not feasible or politically acceptable in South Africa to expand the formal protected area network through land acquisition (i.e., purchase) due to funding and capacity constraints in the different environment-related organisations (Biodiversity Stewardship Policy Document 2010). Consequently, stewardship by private landholders is increasingly promoted nationally by conservation agencies and also by NGO’s (NPAES 2010). These contract protected areas are either isolated but conserving important sites in highly productive areas or in other

cases are linking with one another or with existing statutory protected areas to form corridors of natural intact vegetation.

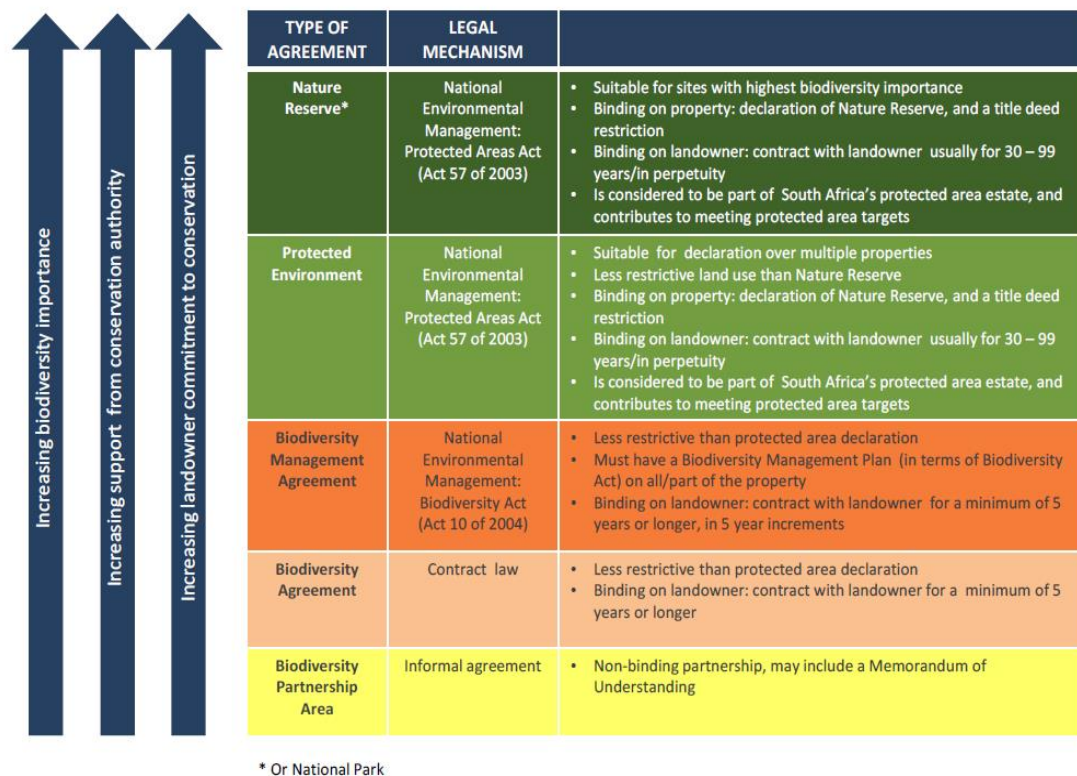


Figure 2: The different types of agreements employed by CapeNature as part of the Biodiversity Stewardship Programme (BSP). Greater commitment from (and hence security provided to valued Nature by) landholders is rewarded through higher levels of support from CapeNature.

1.6 A Personal Perspective

My involvement with the BSP started early in my conservation career in 2005 working for a 54 000 ha private nature reserve in the Klein (or Little) Karoo, part of the biodiversity “hotspot” known as the Succulent Karoo (Desmet. P . March 2017). The reserve decided to engage with CapeNature to set up a

contract nature reserve with them linked to a development offset on the reserve. It was an introduction to the challenges and constraints of a programme dealing with private landowners where land management decision-making and activities often need to move quickly for economic reasons. In 2009, I joined CapeNature as extension officer in the Greater Cederberg Corridor directly working with private landholders in the Sandveld region, a Critical Biodiversity Area. Here my colleagues and I engaged with the agricultural sector, mostly potato farmers, in convincing them to join the stewardship programme, and also with existing stewardship landholders. Since then my career in CapeNature and now for the South Africa office of the World Wide Fund for Nature (WWF-SA) I have been part of both the successes and challenges linked to the stewardship programme.

I have gained a lot of experience through my career understanding the challenges linked to private land conservation, being exposed to both the private landholder and agency perspectives. It is clear that the stewardship programme has achieved a lot in a very short time expanding the private land estate with 54 000 hectares and setting up a well-established programme that was leading this private land conservation sector in the country. In total, up to 2014, 35 privately-protected areas were declared with a total of 43 665 ha's and another 54 sites in the negotiation phase (SANBI, 2014) The programme also expand in capacity from two people starting the programme to a full team of extension specialists but still not enough for the number of landowners that joined the programme. This highlights the need for more research to examine the development and changes over time in the programme, and continues to,

face. There are several large challenges the programme faces, a primary one being the effectiveness of its extension services. That is the reason why I have chosen to study the BSP, as I am passionate about it and because it is part of my career path.

1.7 Aim and Objectives

The aim of the research presented in this thesis was to develop a detailed, evidence-based understanding of the current and future institutional extension capacity needs for the conservation of biodiversity through the CapeNature Biodiversity Stewardship Programme. These results can then function as a framework for improving the implementation of stewardship programmes across the Western Cape, and then hopefully the rest of the provinces implementing stewardship programmes in South Africa. The research also aims to develop scientifically robust methods for guiding the development of policy for current and future private land conservation programmes focusing on the following objectives:

Objectives:

1. Develop an understanding of the similarities and differences of key stakeholders perspectives on the broader goals and functioning of the CapeNature Biodiversity Stewardship Programme so as to articulate the programme's theory of operation with respect to its stewardship landholders;

2. Identify the drivers and levels of landholder's satisfaction with the programme as they determine landholder commitment to the programme, using robust quantitative methods (i.e., psychometric instruments);
3. Identify the capacity needs of the extension service component of the programme as they affect landholder commitment;
4. Present recommendations, based on this research, which can be used to improve and maintain the effectiveness of the extension service (specifically) as it influences the overall effectiveness of the programme.

The stakeholders and the methods used to develop understandings of the BSP are outlined in the conceptual framework presented in Figure 3. Complementing the indices of human dimensions of conservation on private land used in this research with useful biodiversity metrics would be a useful complement to this research.

Achieving this aim and securing these objectives will provide a foundation for 1) benchmarking landholder satisfaction, inclusive of the role of extension in supporting landholders; 2) understanding if the hypothesized decline in landholder satisfaction is factual, so that it, with a focus on extension activities, can be managed; 3) developing tools and approaches for improving the functioning of the extension service, and the BSP more generally.

Survey fatigue during the study was avoided by following the five steps below:

- Audience was not over surveyed
- The survey value was communicated

- The survey questions were easy to answer
- The right questions were asked
- The respondents was carefully considered

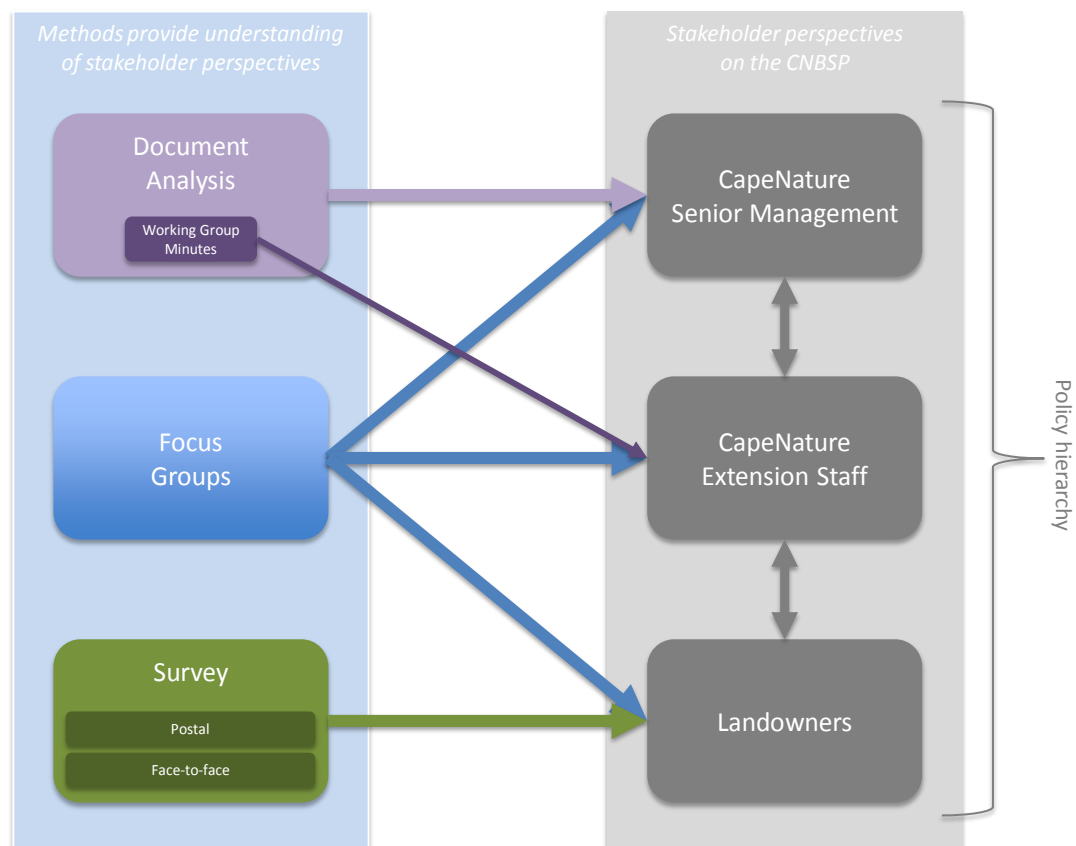


Figure 3: The conceptual framework describing the research presented in this thesis that was used for understanding the Biodiversity Stewardship Programme of CapeNature.

CHAPTER 2 – THE CAPENATURE BIODIVERSITY STEWARDSHIP PROGRAMME AND ITS OPERATIONS

2.1 The Functioning of the BSP

The BSP functions in a similar fashion to many stewardship programmes. It is comprised of different mechanisms designed to complement one another that collectively aim to secure the commitment of landholders, where commitment is defined according to two primary criteria: 1) compliance by a landholder with a management plan cooperatively developed with a land management agency or NGO (e.g., CapeNature); and 2) retention in the stewardship programme (e.g., the BSP) for an agreed time period. One critically important mechanism for ensuring commitment is an extension service (Selinske et al. 2015; Table 2).

Stewardship programmes aim to achieve a specific set of goals. The goals of the BSP are:

- To ensure that privately owned areas with high biodiversity value receive secure conservation status and are linked to a network of other conservation areas in the landscape.
- To ensure that landowners who commit their property to a stewardship option, will enjoy tangible benefits for their conservation actions.
- To expand biodiversity conservation by encouraging commitment to, and implementation of, good biodiversity management practice, on

privately owned land, in such a way that the private landowner becomes an empowered decision maker (CapeNature Website, 2017).

Achieving these goals requires: 1) understanding and aligning the functions of the BSP as they relate to the operationalisation of actions and resources that deliver these goals; and 2) understanding and transforming the behaviour of landholders as they are influenced by their interactions with the BSP. A theory of change can be used to describe and hence understand the desired achievement of the BSP goals. Elucidating a theory of change can be achieved by developing a logic model.

Table 2: The mix of mechanisms implemented by the Biodiversity Stewardship Programme to secure landholder commitment (with commitment defined as compliance with a co-developed management plan and retention in the BSP for an agreed time period). Extension support from a stewardship officer (the topic of the research presented in this thesis) is deemed critically important by landholders (see Chapter 3). Note that mechanisms can serve more than one purpose ⁽¹⁾. ² denote the class of mechanism as categorised in the review by Young et al. (1996). ³ denote a mechanism that has been intermittently implemented depending upon available funding. ⁴ denote mechanisms not implemented at the time of completing this research, but which have been discussed by CapeNature for possible implementation. The mechanisms indicated in the table are regarded as best practice and have been applied globally, notably in the Cape Floristic Region.

	Mechanism	Purpose¹	Type²
1.	National legislation	Legal basis for covenant + integrates stewardship into broader national conservation and agricultural activities	Instrument
2.	Covenant	Contract between the state and a landholder securing an agreement	Instrument
3.	Management plan	Details the activities allowed, or not, on a property	Instrument
4.	Support from an extension officer	Tangible land management support	Instrument + incentive
5.	Auditing procedure	Mechanism for auditing landholder compliance	Instrument + incentive
6.	Assistance with clearing invasive alien plants	Maintains and improves conservation values and ecosystem services + demonstrable commitment by government to equitable cost disbursement + assists landholder with the legal obligation to clear	Instrument + incentive

		invasive alien plants + reduces landholders management costs	
7.	Funding for fencing sensitive areas	Secures vulnerable species + demonstrable commitment by government to equitable cost disbursement + reduces landholders management costs	Instrument + incentive
8.	Tax deduction	Demonstrable commitment by government to equitable cost disbursement + recognition of landholders contribution to conservation on behalf of society + reduces landholders management costs	Incentive
8.	Rates rebate	Demonstrable commitment by government to equitable cost disbursement + recognition of landholders contribution to conservation on behalf of society + reduces landholders management costs	Incentive
10.	Land sales tax rebate	Demonstrable commitment by government to equitable cost disbursement + recognition of landholders contribution to conservation on behalf of society + reduces landholders management costs	Incentive
11.	Sign for landholder's front gate ⁴	Public recognition of landholders contribution to conservation on behalf of society + builds sense of pride	Incentive
12.	Annual conference ^{3,4}	Awards build sense of pride + meeting builds social capital	Incentive + institution

2.2 Introduction to Logic Models

2.2.1 What is a logic model?

A logic model expresses a “theory of action” or “theory of change” for a programme, such as the BSP. It is an essential ingredient for guiding an evaluation of the effectiveness of the programme in achieving its goals by identifying key programme elements and articulating how these elements are expected to relate to one another (Anderson, 2000; Cooksey et al., 2001). It describes logical linkages among programme resources, activities, outputs, audiences, and short, intermediate and long-term outcomes (McLaughlin and Jordan, 1999). Logic models further help to identify partnerships critical to enhancing performance, since they demonstrate links from situations (problems) to the interventions (inputs and outputs), and the impact (outcome) (McLaughlin and Jordan, 1999; Millar et al., 2001). The logic model development process has been used for at least thirty years and presents a plausible and sensible process for understanding how a programme will work under certain conditions to solve identified problems (Bickman, 1987). Currently, logic models are the most universal form of theory of change representation used for planning and evaluation (Margoluis et al., 2009). Logic models have been developed for other conservation initiatives in South Africa including the Second Southern African Bird Atlas Project (SABAP2) and the Ostrich Industry in the Little Karoo (respectively, Wright, 2011; Wheeler, 2014).

The logic model is a graphical representation of the casual relationship that links the various components of a programme (Chen 2005). These

components are summarized in the logic model as resources, activities, outputs, and short, mid and long-term outcomes. This developed a comprehensive and accurate model of the BSP for review and analysis in the research. Given that the BSP shifted policies and practices throughout the life of the programme, the development of a logic model was included in the research to understand trends of change and the evolution of the programme indicating the institutional dimension of the BSP and linkage to external factors and processes (K. Purnell 2013 and J. Gouza 2013, pers. Comms).

The logic model was developed using the following research methods:

- Document analysis of written information
- Focus groups with key stakeholders
- Face-to-face interviews with BSP landholders (Chapter 3)

2.2.2 Methods

The process for developing a Logic Model for the CapeNature Stewardship programme included four stages (McLaughlin and Jordan, 1999):

1. Collecting the relevant information;
2. Defining the stewardship programme and its context;
3. Defining the elements of the logic model;
4. Constructing the logic model

Stage 1: Collecting the relevant information

Information relevant for describing the elements and logic of the CapeNature Stewardship programme was obtained from multiple sources. These included industry documentation such as strategic plans, codes of conduct, policy documents, and personal experience working in the programme and three focus group sessions with key role-players (senior management – 6 participants, extension personnel – 6 participants in the programme and stewardship landholders – 6 participants) in the industry. This information was essential to gain insight into the programme and what key contextual factors to consider when designing the logic model (Wheeler, 2013).

Stage 2: Defining the stewardship programme and its context

The focus group method is an effective research tool for deriving individual and collective opinions, values and beliefs from an identified group to evaluate services or programmes (Kitzinger, 1995; Cote-Arsenault and Morrison Beedy, 1999; Krueger and Casey, 2000). This research process also encourages the development of a shared vision among each group for how the programme functions which is the product of persistent discovery and negotiation between and amongst the different participants.

Stage 3: Defining the elements of the logic model

After the completion of the three focus groups all the responses from the participants on the Participian sheets and field notes were collated in different word documents for each focus group session. Responses for each focus

group were then qualitatively classified, coded and used to produce a list of all the items or elements to each category of the logic model, using the categories suggested by McLaughlin and Jordan (1999). In producing a logic model for the three focus groups the elements were classified as resources; activities; outputs; and short-term, intermediate and long-term outcomes including external influences. The elements in each category were combined with similar or duplicated functions to reduce and simplify the different lists.

Stage 4: Constructing the logic model

The logic model was then constructed by using the stewardship programme elements in the resource category, linking it to the respective stewardship and extension activities, which in turn were linked to the outputs, developing the desired short-, intermediate- and long-term outcomes for the programme. The process also involves illustrating the identification of linkages that should be in place between specific elements in the programme to indicate which elements had become excluded due to missing linkages and therefore which may have an influence on the overall effectiveness of the CNSP in achieving its goals.

The final logic model products are discussed in section 2.4 at the end of this chapter. Logic tables that formed the basis of the logic models are presented in Figures 5 - 12.

2.3 Document Analysis

2.3.1 What is a Document Analysis?

Document analysis is a form of qualitative research in which sources of written information are interpreted by the researcher to give voice and meaning around an assessment topic. Organizational and institutional documents have been a staple in qualitative research for many years. As an analytical procedure, document analysis entails finding, selecting, appraising and synthesizing the data relevant to the study found in relevant documents (Keshaw 2007). Analyzing documents incorporates coding content into themes similar to how focus group or interview transcripts are analyzed (Administration methods 2010).

2.3.2 Methods

Two primary types of documents were analysed in the research presented in this thesis:

- 1) *Public Records*: The official, ongoing documentation of an organization's (CapeNature) activities. Examples include mission statements, annual reports, policy manuals, strategic plans and stewardship reference group minutes.
- 2) *Physical Evidence*: Tangible items (often called artifacts) found within a study setting. Examples include flyers, brochures, posters, agendas, handbooks, and training materials.

A systematic, qualitative procedure was followed for assessing public records and physical evidence related to the BSP. It entailed the following steps adapted from Altheide's (1996) Process of Document Analysis.

- a) Determining inclusion criteria for documents;
- b) Collecting documents;
- c) Articulating key areas of analysis;
- d) Document coding and verification; and
- e) Analysis

2.3.2.1 Determining inclusion criteria for documents

Types of documents reviewed for the BSP included organisational policies, strategies, guidelines or similar documents, assessments, minutes from meetings, appraisals, evaluation reports, progress reports, and annual reports for the programme. These were deemed appropriate as they represent the formal procedures and processes through which the provincial government operates the BSP and includes available official documents that detail operations and relations with other stakeholders, notably landholders. These documents provide a direct insight into how and why decisions regarding the BSP were made.

Documents were assessed qualitatively to identify their relevance to this study. Documents were included, firstly, where the primary focus of the document was clearly the BSP (e.g., BSP meeting minutes), secondly, where my direct experience suggested the possible location of documents that might

make a small reference to the BSP, and thirdly, where other stakeholders (e.g., CapeNature staff) suggested possible sources of documents relevant to this study.

The publication date of documents was used as a baseline so as to track changes and progress in policy and practice since the programme began in 2001 through to the point in time where the data gathering element of this research was completed (i.e., 2013).

2.3.2.2 Collecting documents

Documents for the document analysis were collected from the BSP and regional stewardship offices in the Western Cape. It was highly challenging to locate documents related to the functioning of the programmes due to, firstly, the lack of record keeping from the beginning of the programme, and secondly, the loss of documents during the substantial structural changes to CapeNature and the BSP in 2015. Access was granted by source organisations, and documents deemed confidential by source organisations were not included. Most of the documents consisted of BSP budgets and senior management decisions linked to minutes of specific management meetings in the BSP.

2.3.2.3 Articulating key areas of analysis

Specific search themes out of the research topic were developed and applied to the individual documents that were secured. List of search themes includes:

Stewardship motivations
Landowner contribution
Positive Stewardship Landowner
Management Assistance
Extension training
Stewardship Extension
Landowner Responsibility
Stewardship Incentives
Collaboration
Alien Clearing
Resource Management
Extension needs
Extension
Stewardship Satisfaction
Stewardship Communication
Extension visits
Stewardship Research
Information Sharing

2.3.2.4 Document coding and verification

Each document was analysed using the specific search themes to determine the extent to which the themes articulated as relevant to the stewardship programme were described, addressed or considered. Text relevant to each theme was highlighted. Based on these findings, the themes identified in the

document were assessed across values respectively for categories of either "good", "OK", "limited", "none" or "unclear" (Table 3). These weightings assisted in determining relevance, presenting the data and making recommendations (Wheeler, 2014).

Documents rated as "good" included clear and consistent references to the programmes and research themes. Documents rated as "OK" indicate presence of themes related to the programme and research, but insufficient detail to confidently give a score of "good". Documents classified as "limited" only provided a brief reference of themes related to the programme and the research. Documents where there was no information related to the programme and research themes were categorized as "unclear/none".

This type of qualitative assessment of content, meaning and relevance in context is central to the value of document analysis as a method for developing and understanding of a context, and significantly distinguishes the methodology from a search using keywords. For example, one of the themes was "extension training". Rather than conduct a generic search for references to "extension training", the research sourced all documents hypothesized to be relevant and then assessed whether the theme of "extension training" was included in any documents related to the BSP.

2.3.2.5 Analysis

The coded data was analysed to determine trends per document, per type of document, per theme, changes to document content over time and to compare policy versus practice in the BSP.

Two interrelated principles were used to guide the analysis – impartiality and dependability (Altheide, 1996). An analysis is considered "dependable" if another reader would have "reached the same general conclusion given the opportunity to analyse the same set of documents under similar conditions" (Altheide, 1996). Impartiality is an inclination to weigh both views or opinions equally. The rationale behind each assessment was recorded, citing detail and quotes from the documents related to the themes analysed. The documents used in this part of the research served as the sole source of information for the assessment, which facilitated the process of seeking objective assessments of the documents. This proved challenging on some occasions, for example, in some cases it was difficult allocating high scores for certain themes as detailed in some documents when I knew that the stated themes or policies were not actually applied in practice in the BSP. This also included cases in the assessment

where the researcher had observed practices that had improved post publication date of a document, or where certain themes could be reasonable assumed to include or indicate other practices that were not stated in the different documents analysed. I was very conscious of remaining focused on applying the method of Altheide (1996) robustly, thereby ensuring that the principles of impartiality and dependability were manifest in the research.

2.3.3 Results

The first round of assessment entailed the analysis of 88 policy and relevant stewardship documents dating from 2001 (the year in which the CapeNature Stewardship Programme commenced) (pers. comm. K. Purnell 2013) through to 2013, inclusive. These documents included:

- 1) Public Records: mission statements, annual reports, policy manuals, strategic plans, management meeting minutes and stewardship reference group minutes.
- 2) Physical Evidence: Flyers, brochures, posters, agendas, handbooks, and training materials.

Table 3: Search themes results ("good", "OK", "limited", "none" or "unclear")

<u>Search Theme</u>	<u>Result</u>
Stewardship motivations	OK
Information Sharing	Limited
Stewardship Research	Limited
Extension Visits	Limited
Stewardship Communication	Ok
Stewardship Satisfaction	Limited
Extension	Unclear
Extension Needs	Limited
Resource Management	Limited
Alien Clearing	Good
Collaboration	unclear
Stewardship Incentives	Ok
Stewardship Extension	Ok
Landowner Responsibility	Unclear
Extension Training	Limited
Positive Stewardship landowner	Unclear
Management Assistance	Limited
Extension Capacity	Good

Stewardship Event Chart

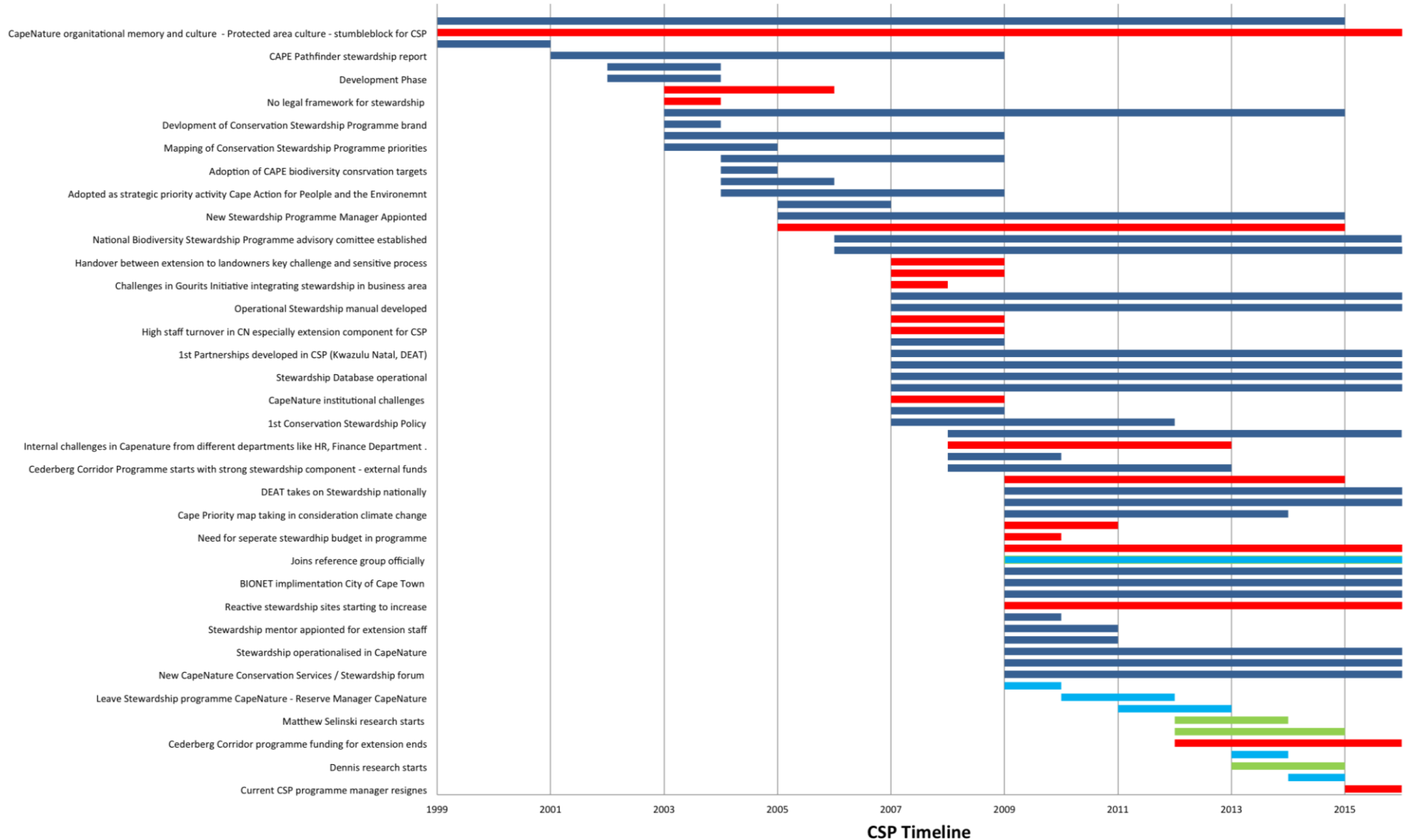


Figure 4: – Timeline of the events defines the history of the CapeNature Biodiversity Stewardship Programme (BSP). Red bars = critical events specifically of the BSP; dark blue bars = stewardship activities; sky blue bars = the authors personal experiences; green bars = research events.

2.4 Focus Groups

2.4.1 What is a focus group?

A focus group is a small, but demographically diverse group of people whose reactions are studied especially in market research or political analysis in guided or open discussions about a new product or something else to determine the reactions that can be expected from a larger population. It is a form of qualitative research consisting of interviews in which a group of people are asked about their perceptions, opinions, beliefs, and attitudes towards a product, service, concept, advertisement, idea, or packaging. Questions are asked in an interactive group setting where participants are free to talk with other group members. During this process, the researcher either takes notes or records the vital points he or she is getting from the group (Babbie. 2007).

2.4.2 Methods

2.4.2.1 Selecting participants

Three focus groups were conducted to identify the logic of practice of the stewardship programme. The composition of the focus group consisted of men, women, different cultural groups and ages with between 5-8 participants in each focus group. Each was designed to capture perspectives and information from the three key stakeholder groups participating in the BSP:

- Landholders who have signed Stewardship Agreements with CapeNature through the BSP;

- CapeNature Extension personnel from CapeNature involved with the BSP; and
- Senior Managers from CapeNature involved with the BSP; and

Each group consisted of between four and seven participants who were selected on the basis of their involvement in the BSP and their ability to provide insight into, and information on, the programmes processes, effectiveness and personal experience with the programme and landholders. The three groups and specific participants were also selected to provide sufficient diversity to encourage discussion (Bloor et al., 2001).

The selection process for the landholder focus group was based on the status of their stewardship agreement and the year that they had joined the programme. To give a good representation of landholders in the programme, it was decided to select landholders that have been with the programme for a long time and also landholders that recently joined the programme. This also included landholders that committed to the longer contractual Nature Reserve as well as the less demanding Biodiversity Agreement option. Landholders were invited by email and telephonically explained the purpose and process of the focus group and broader information on the research project itself. It was made clear that participation was voluntary (Wright, 2011).

In the case of the focus group for extension personnel, participants were invited based upon their position in the BSP, specifically those directly engaged in providing extension services to landholders. Personnel were

selected from across the Western Cape Province where active stewardship landholders were present to provide a representative sample of potentially diverse characteristics of the social, economic and ecological characteristics of the province. Extension personnel were provided information about the research via telephone, and then invited via email to participate. Participation was entirely voluntary (Wright, 2011).

Senior personnel were selected based on their position CapeNature and their involvement in the BSP. It was thought important to involve the most senior members of staff so as to capture the diverse institutional facets of the stewardship programme, including the legal aspect. Senior members were contacted telephonically to invite them, followed by a formal email to explain the process and research. In this focus group it was important to get all the senior managers involved in the process of stewardship and managing extension personnel.

2.4.2.2 Facilitating the focus group

The discussion was started with an introduction to the research and the focus group methodology. This was followed with an introductory question to stimulate discussions in the groups and was followed by transition questions that gradually narrowed the scope of the focus group session to the research questions. The key questions were presented as the core of the research topic, which was to determine the perceptions of the different focus groups and individuals taking part involved in the BSP. The focus group discussions

were closed with an ending question and a final question focusing on an opportunity for general comments (Morgan, 1993; Krueger 1998).

Understanding the extension capacity needs for CapeNature Stewardship Programme in the Western Cape Province of South Africa.

Introductory Questions:

Introduction to the focus group.

Why are you involved in the stewardship programme?

Transition Questions:

What is your perception of the BSP?

How do staff perform, notably extension staff?

Transition Questions:

Describe the process from deciding to join the BSP to the signing of the agreement.

What works effectively in the programme and what does not?

Key Questions:

What are the biggest challenges in the programme?

Can you provide suggestions on how to improve the BSP?

What is the role of the CapeNature stewardship extension officer?

What is the role of the landholder in the BSP?

Closing Question:

Should the current BSP model be changed in any way?

Final Question:

Anything else? (General comments)

Figure 5: Questions comprising the question route (Halcomb, 2007) followed during three focus groups conducted with the three main groups involved in the BSP, specifically: 1) BSP Landholders; 2) Senior Management of the Stewardship Programme; and 3) Extension personnel working in the BSP.

The discussions were facilitated by a trained facilitator whilst the primary researcher captured notes during the discussions. The discussions focused on the research goal and questions regarding the principal components of the logic model. The format involved the facilitator asking questions and capturing the answers on A1 sheets in the main headings identified for compiling the logic model (McLaughlin & Jordan 1999).

In order to determine the structure and guide the flow of the focus group enquiry, a specific question route was developed to guide the facilitator (Table 1), the focus group and to enhance the consistency of the data that was obtained between the different focus groups (Halcomb et al., 2006). A "funnel" approach was used to frame the development of the specific questioning route (Morgan, 1997; Beyea and Nicoll, 2000). This approach allowed for a wider perspective of individual experiences in the initial stages giving some background as to why they decided to participate in the BSP, followed by specific questioning in the stages to follow in the focus group session relating to the specific research questions and ending with questions giving the participants the opportunity for general comments on the programme. (Krueger, 1998).

Focus groups were conducted at the most convenient location for each group. In the case of the stewardship extension personnel it was combined with another stewardship meeting to save on costs and time. Each focus group

was led by a qualified facilitator, who was selected based on her in depth knowledge and understanding of the focus group process and knowledge of conservation in the Western Cape. The facilitator was briefed before each of the focus group sessions and was familiar with the questions that had to be asked during the focus group sessions.

2.4.2.3 Data capture

The facilitator used the facilitation package Participlan to present the questions to each focus group and to capture the responses from the participants (Botha and Gardener, 2003). Self-adhesive sheets with the questions written on them were placed against a wall for the participants to see. The group with the help of the facilitator proceeded through all the questions whilst the facilitator posted all the responses from the participants on the A0 sheet, beneath the relevant questions. Where applicable, comments were captured and related responses were clustered to relevant questions on the A0 sheet. All the information generated during the discussions was captured in writing and photographs of each A0 sheet by the researcher. This process was repeated for each focus group session keeping each session to a maximum of 4 hours that included a 15 minute tea break.

2.4.2.4 Data analysis

The elements in each category were combined with similar/duplicated functions to reduce and simplify the lists. The researcher then manually constructed the logic model by using the industry elements in the resource category, linking it to the respective activities, which in turn were linked to the

outputs, giving rise to the desired short-, intermediate- and long-term outcomes (Wheeler 2013). In addition to the existing linkages, the social linkages that should be in place between specific elements were also illustrated to indicate which elements had become excluded due to missing linkages and therefore which may have an influence on the overall effectiveness of the BSP in achieving its goals. Indirect linkages were also identified between the various elements. Indirect linkages were considered by the principle researcher as linkages that are, by default, part of the programme, but do not function as a critical part in the operations of the programme and are therefore linkages that are not directly responsible for the achievement of the programme (Wright, 2011).

Linkages or relationships between different elements of the logic table were then identified by the principal researcher. In this way, resources were linked to activities, which are in turn linked to outputs, giving rise to desired outcomes.

The logic table with classified elements (resources, activities, outputs and short-term, intermediate- and long-term outcomes) was then developed. The researcher assessed the accuracy and completeness of the information contained in the logic table. The elements in each category were combined with similar/duplicated functions to reduce and simplify the lists. The logic model was then manually constructed as a figure.

2.4.3 Results

The focus group sessions proved to be one of the most significant methods to highlight the key aspects in the three groups on which they agreed and disagree. There was a clear trend that the landowners understanding of stewardship and their goals differ from the senior management in CapeNature. From the focus group sessions, the goals were clearly on conserving these Critical Biodiversity Areas and to manage them. A difference was highlighted in the focus groups on how to achieve this. The landowners clearly indicated that they see them as part of the long-term management solution of the critical areas, if they receive the necessary extension support and management incentives. Senior management focused on the 5 year expansion strategies in place with a focus that shifted more to achieving expansion targets and securing budgets for the programme over the long-term. The general trend emerged that outcomes were different for each group linked to specific timelines for these conservation and management outcomes. Outcomes were categorised across short-term (~5 years), mid-term (~20 years) and long-term (in perpetuity).

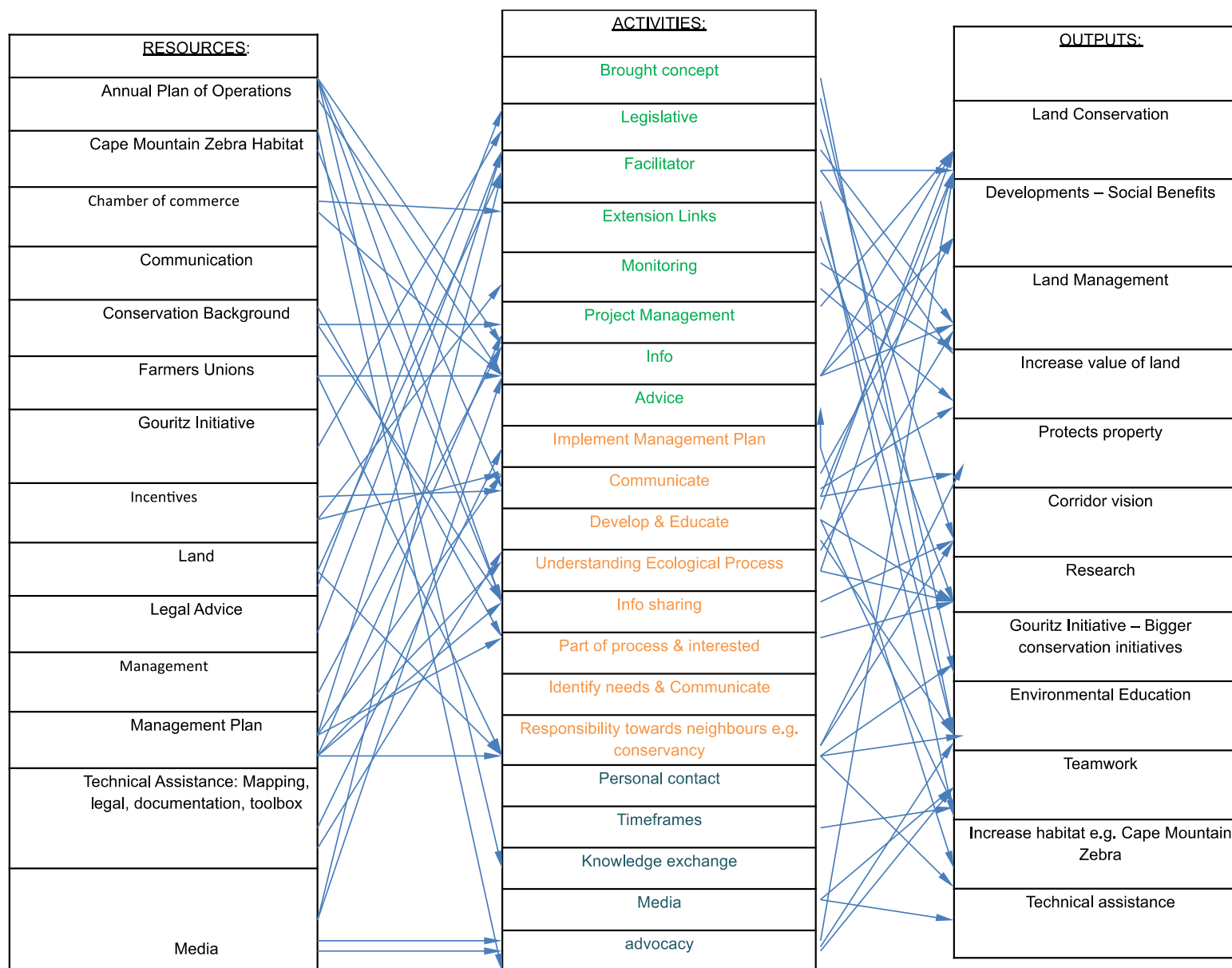


Figure 6: Logic model (Part One) constructed from the focus groups held with landholders involved in the CapeNature Biodiversity Stewardship Programme. Part Two of the logic model displaying the Outputs and the Outcomes (Short-term, Mid-term and Long-term) is presented on the following page. Green font denotes General Activities; orange font denotes Extension; blue font denotes Landowner; and Senior Management Activities.

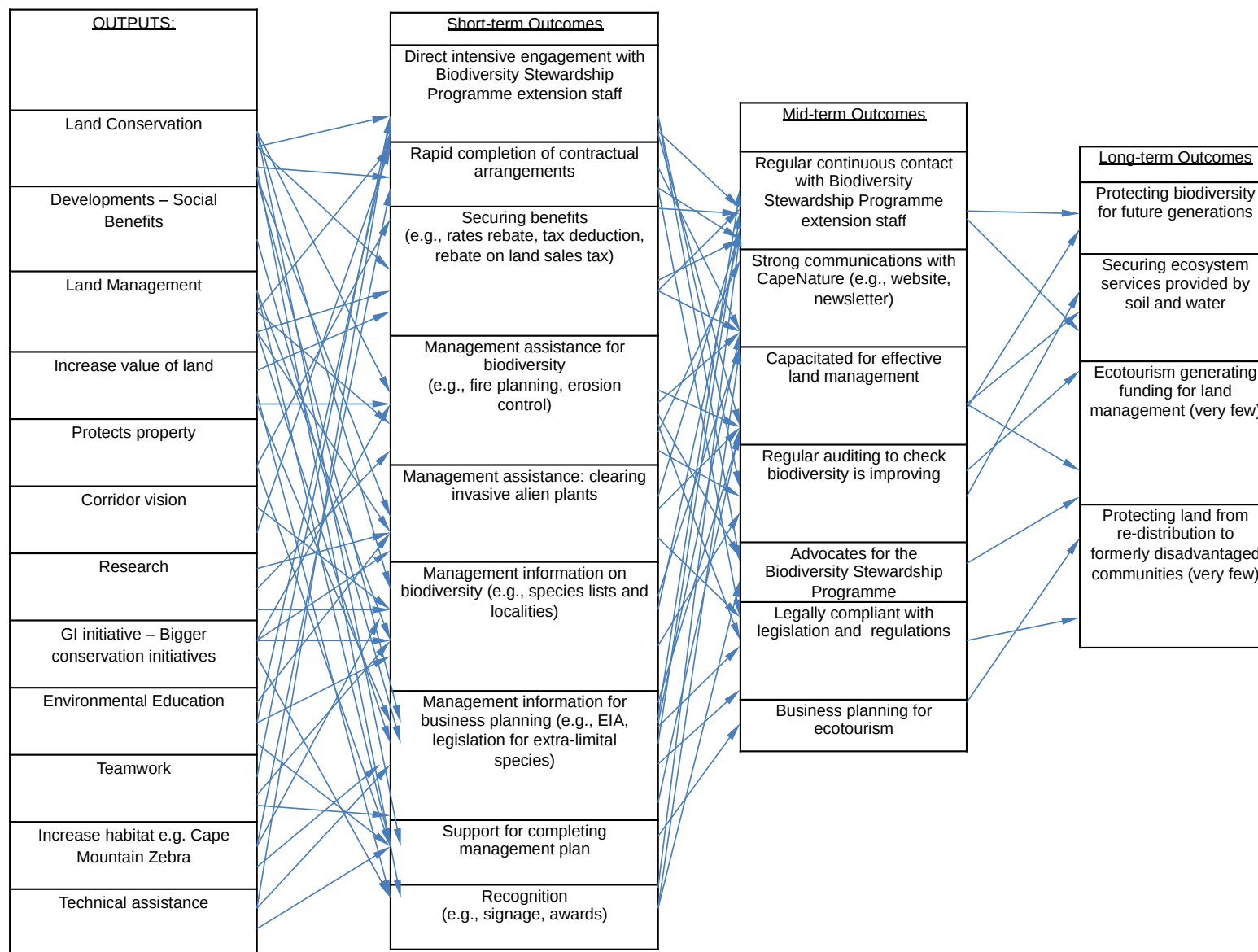


Figure 7: Logic model (Part Two) constructed from the focus groups held with landholders involved in the CapeNature Biodiversity Stewardship Programme. Part One of the logic model displaying the Resources, Activities and Outputs of the programme is presented on the previous page. Green font denotes General Activities; orange font denotes Extension; blue font denotes Landowner; and Senior Management Activities.

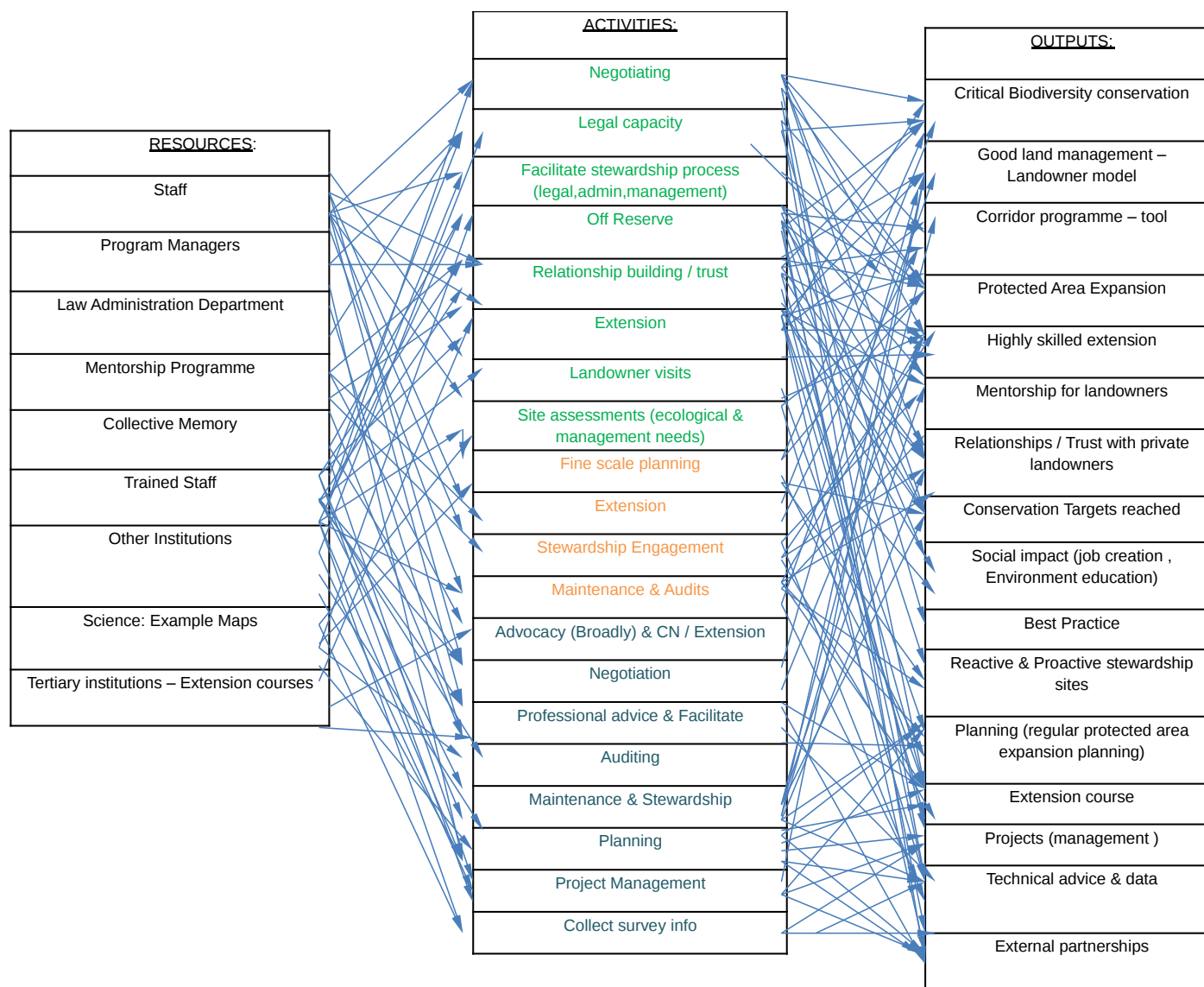


Figure 8: Logic model (Part One) constructed from the focus groups held with Extension Officers involved in the CapeNature Biodiversity Stewardship Programme. Part Two of the logic model displaying the Outputs and the Outcomes (Short-term, Mid-term and Long-term) is presented on the following page. Green font denotes: General Activities; orange font denotes Extension; blue font denotes Landowner; and Senior Management Activities.

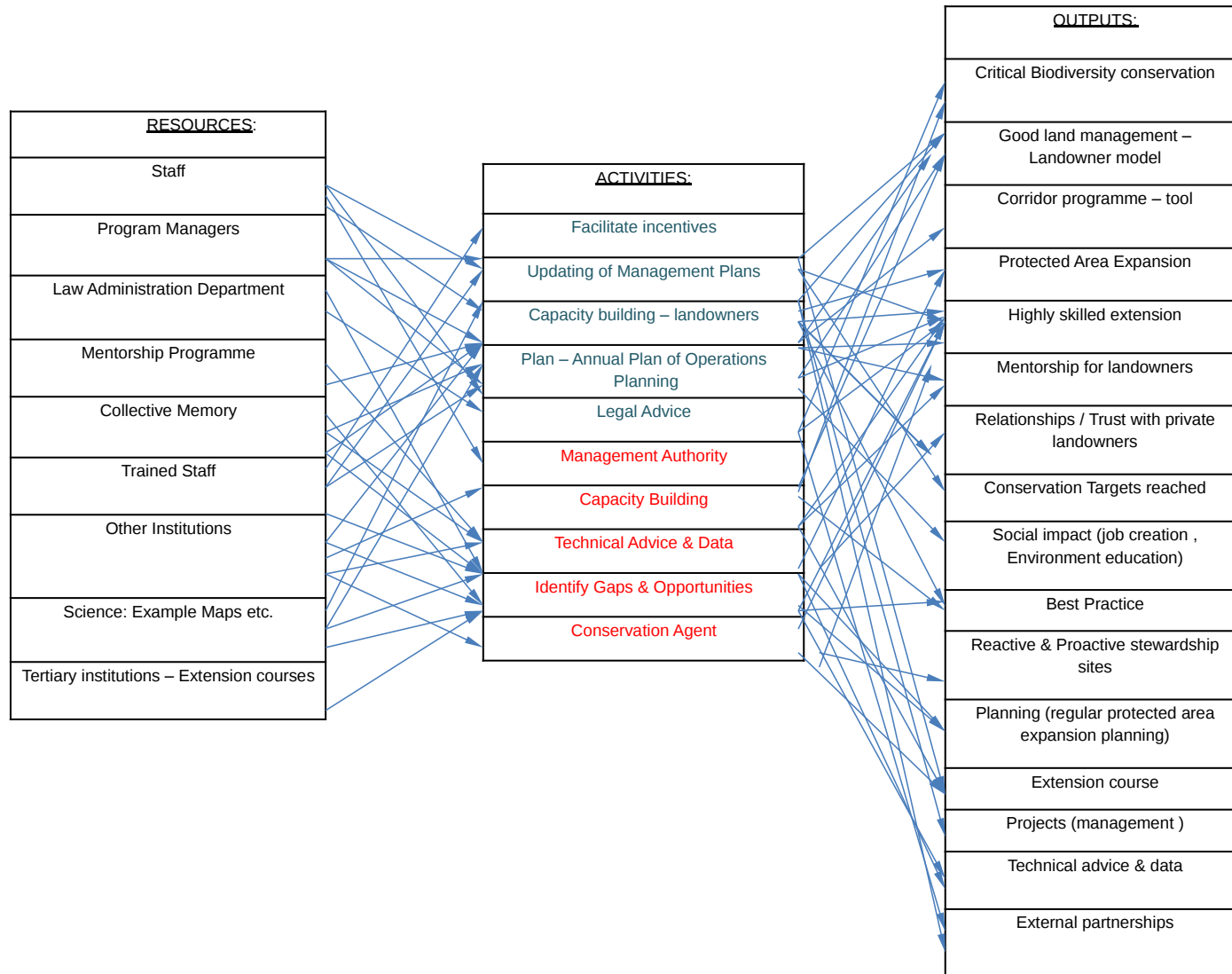


Figure 9: Logic model (Part Two) constructed from the focus groups held with Extension Officers involved in the CapeNature Biodiversity Stewardship Programme. Part One of the logic model displaying the Resources, Activities and Outputs of the programme is presented on the previous page. Green font denotes General Activities; orange font denotes Extension; blue font denotes Landowner; and Senior Management Activities.

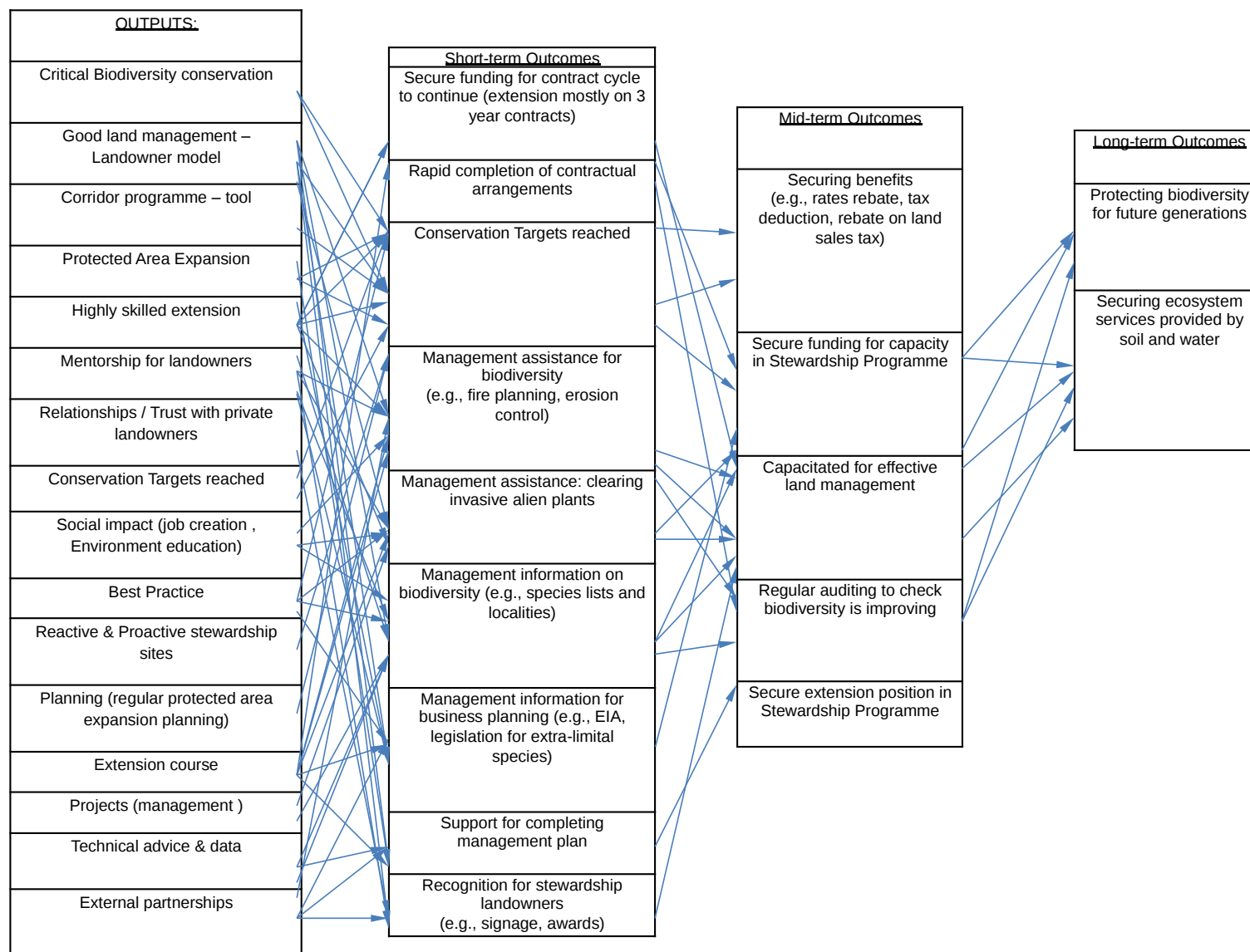


Figure 10: Logic model (Part Three) constructed from the focus groups held with Extension Officers involved in the CapeNature Biodiversity Stewardship Programme. Parts One and Two of the logic model displaying the Resources, Activities and Outputs of the programme are presented on the previous page. Note that Parts One and Two are on separate pages as the list of Activities is simply too long to fit on a single page. Green font denotes General Activities; orange font denotes Extension; blue font denotes Landowner; and Senior Management Activities.

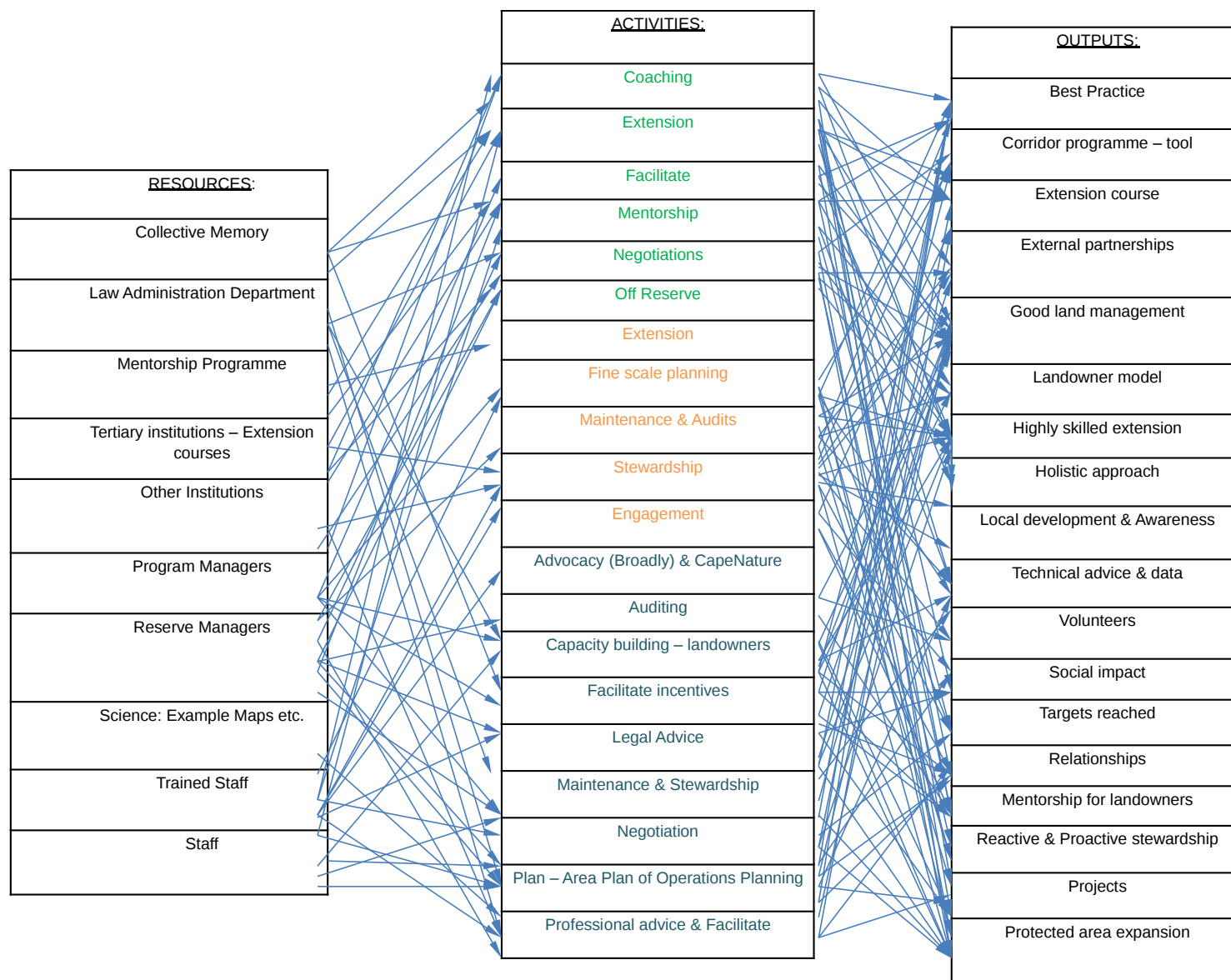


Figure 11: Logic model (Part One) constructed from the focus groups held with Senior Managers involved in the CapeNature Biodiversity Stewardship Programme. Part Two of the logic model displaying the Outputs and the Outcomes (Short-term, Mid-term and Long-term) is presented on the following page. Green font denotes General Activities; orange font denotes Extension; blue font denotes Landowner; and Senior Management Activities.

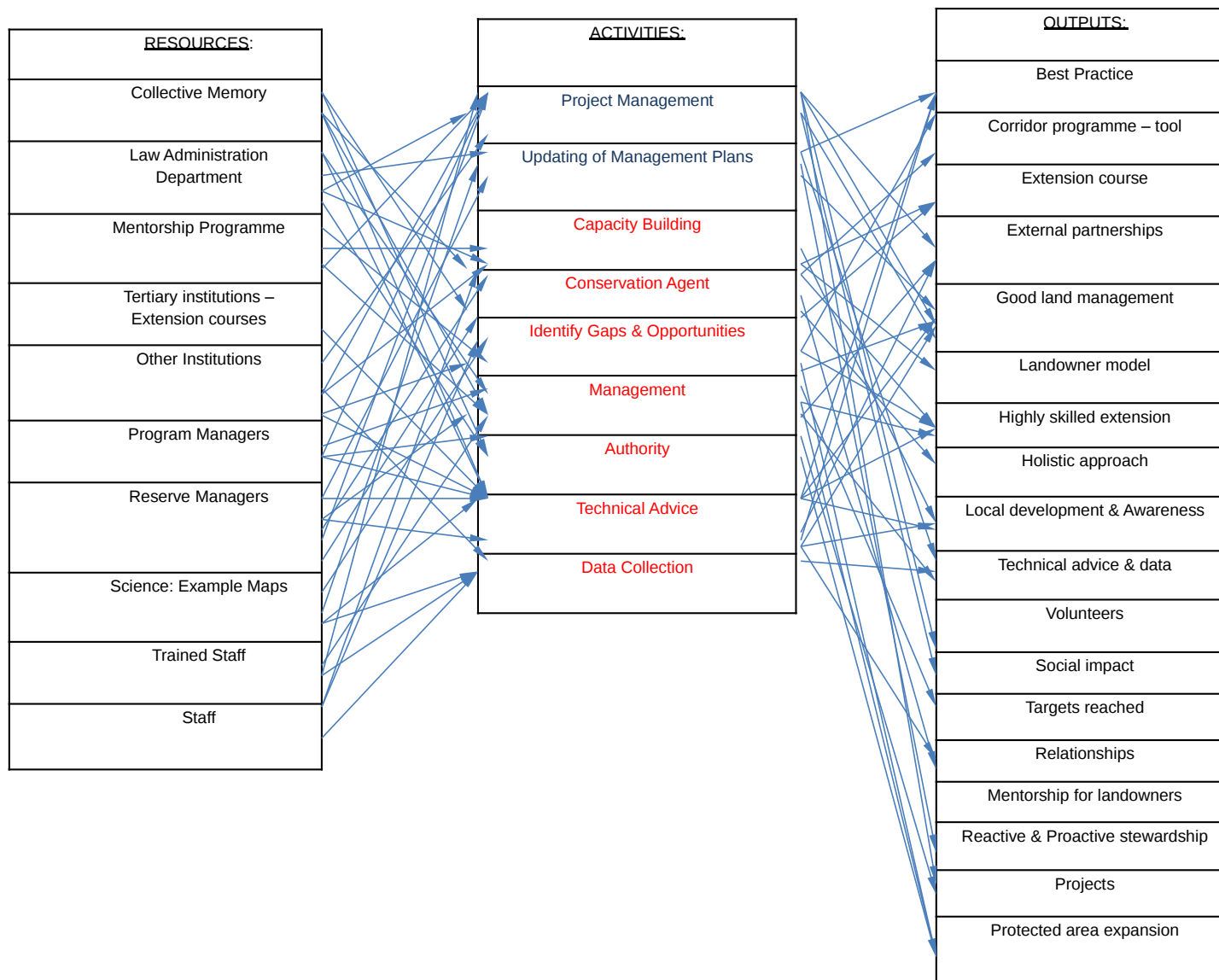


Figure 12: Logic model (Part Two) constructed from the focus groups held with Senior Managers involved in the CapeNature Biodiversity Stewardship Programme. Part One of the logic model displaying the Resources, Activities and Outputs of the programme is presented on the previous page. Green font denotes General Activities; orange font denotes Extension; blue font denotes Landowner; and Senior Management Activities.

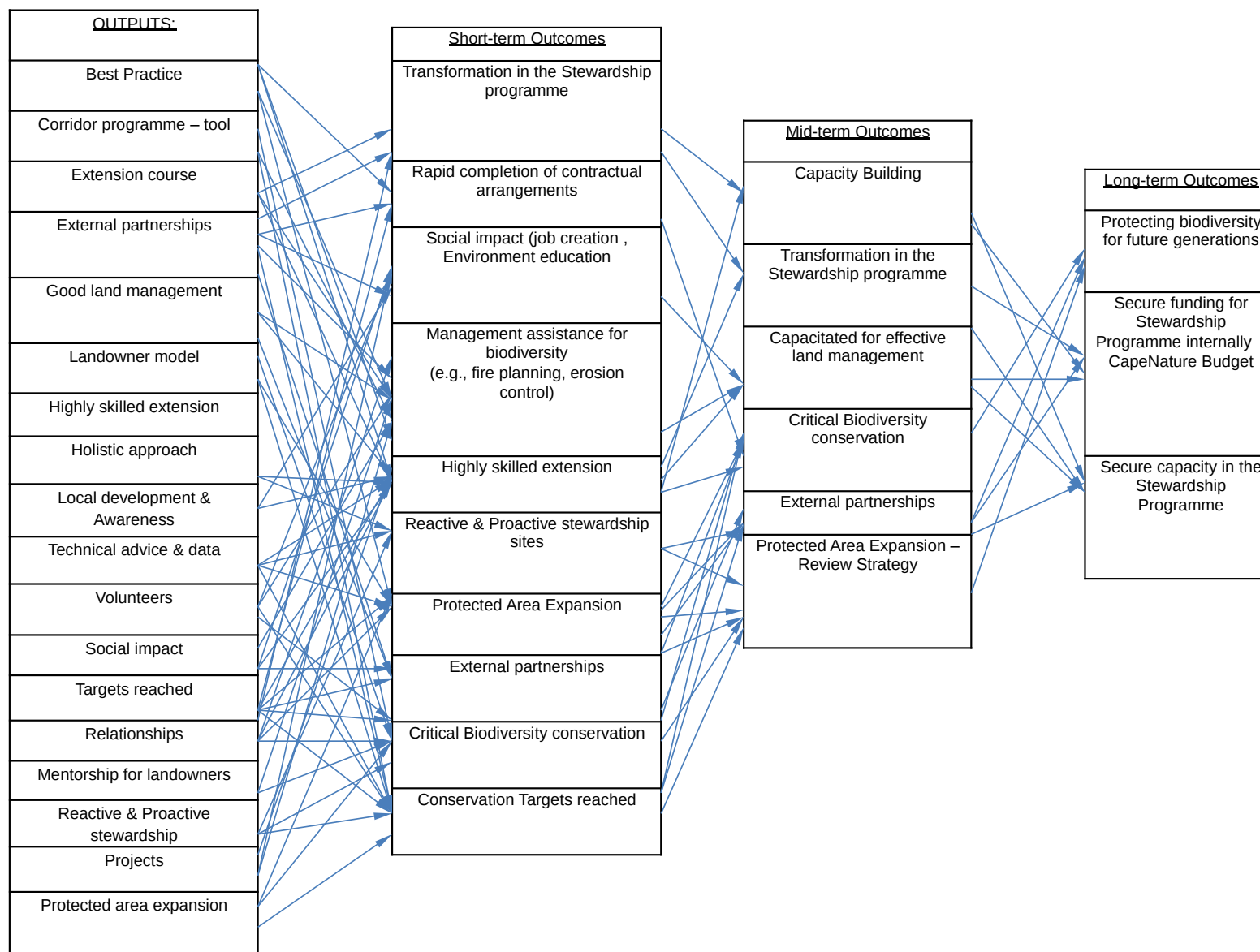


Figure 13: Logic model (Part Three) constructed from the focus groups held with Senior Managers involved in the CapeNature Biodiversity Stewardship Programme. Parts One and Two of the logic model displaying the Resources, Activities and Outputs of the programme are presented on the previous page. Note that Parts One and Two are on separate pages as the list of Activities is simply too long to fit on a single page. Green font denotes General Activities; orange font denotes Extension; blue font denotes Landowner; and Senior Management Activities.

2.6 Discussion – The Logic Model

The final product of the Logic Model development process was a diagram, or conceptual model, that described the overall functioning of the stewardship programme (McLaughlin and Jordan, 1999). The elements of the logic table that were assessed resulted in the logic table (Appendix 1).

The use of the three focus groups, to facilitate development of the logic models provides the information basis for evaluating the CapeNature Biodiversity Stewardship programme. In the long term, it will be necessary for the BSP to evaluate all of these desired outcomes. It is also essential that the programme review where and how they might actively contribute to generating these outcomes, since currently many outcomes rely purely on the availability of funding and CapeNature's capacity linked to operation budgets. In particular, the programme might engage more with the mid-term outcomes, by designing activities that, for example, develop stewardship landowner's management skills and create ambassadors for biodiversity in the different stewardship landscapes.

It is clear from the logic model that the relationships between the various elements in the BSP are highly complex and that the programme is dependent on a complex suite of interacting resources, ranging from highly trained extension staff dealing with all the different activities like legal processes, ecological surveys, management assistance, and management plan development for the stewardship landowners linked to the short-term outcomes desired by the stewardship landowners. It is clear from the logic

models many resources for all three groups are available and required to achieve the different activities and outputs. It is the classic 'wicked' problem of protecting private land where navigating one's way through all the resources and activities to achieve the short-, medium- and long-term outcomes is highly problematic for the extension staff on the ground working with a variety of landowners and stewardship sites.

The activities documented in the logic models are mostly reliant on resources such as highly skilled extension staff, legal capacity, project management and the necessary capacity provided by senior management, which have the highest number of linkages. At a glance, looking only at the resources, activities categories, the programme appears to be operating effectively. The many available resources are contributing to the activities that need to take place in the programme to achieve the short-term outcomes. However, should one take the flow of relationships a level further, looking at the linkages between outputs and desired short-, medium- and long-term outcomes for the landowners, extension and senior management you can identify clear differences between desired outcomes for the different groups especially the long-term outcomes.

The logic model illustrates quite clearly that there is a serious deficiency in the achievement of the programme's desired short- to long-term goals. This clearly shows the disjuncture between the three groups and desired medium- and long-term outcomes with the landowners wanting support to conserve biodiversity long-term with assistance in management and empowering them

to be stewards of the Critical Biodiversity Areas. The "how" of the programme of achieving the different medium- and long-term outcomes differs in the logic models and is highlighted in the different medium-term outcomes with the landowner group focusing on the benefits of joining the stewardship programme and the senior management and extension groups focusing on building capacity and securing capacity in the programme.

The above discussion illustrates the utility of the logic models in assessing a programme's performance, in this case one of the first programmes in South Africa working on protecting important private land for conservation. Essentially we are now able to view the story of the programme's operation, and the smooth transition which exists between the different components. It is beyond the scope of this data to provide a final conclusion of the programme's effectiveness, however this research has allowed for the programme's theory of operation to be articulated, and provided a repeatable and robust methodology for producing the theory of operation. It is the view of this researcher that the current BSP programme needs to look at the medium- and long-term outcomes for the most important partner in the stewardship programme the stewardship landowner.

The logic models indicate that the current short-term outcomes are achieved with all the resources and activities in the programme, but a strategy on how to secure the long-term outcomes for the landowners enabling them to be stewards of the land in the long-term needs developing. Then the focus of securing long-term capacity in the programme focusing on highly skilled

extension and developing it continuously in the programme will be important. This will be achieved with a shift in the medium- and long-term outcomes of senior management that needs to align with the landowner and extension outcomes.

CHAPTER 3 – LANDHOLDER PERSPECTIVES ON CONSERVATION STEWARDSHIP AND EXTENSION SERVICES

3.1 Introduction

There has been a call in recent years for the adoption of an evidence-based approach in the design and implementation of conservation programmes (Pullin et al. 2004). Such an approach is integral for improving and demonstrating the effectiveness of conservation programmes, together with enhancing the effective and cost-efficient use of time, financial and other resources when implementing these programmes, including the management of privately and formally protected areas (Ferraro & Pattanayak 2006).

Techniques for examining the effectiveness of *formally* protected areas have been the focus of research in conservation for several decades. These approaches have focused primarily upon the maintenance of biodiversity, and to a lesser degree, the management systems, of these programmes. Evaluation of the human and social dimensions – those elements and processes that underpin the effectiveness of protected areas via the pressures that people place upon biodiversity – has gone relatively unexamined. Even less research has been conducted into *privately*-protected areas in this regard. Whilst a relatively small but significant body of literature has examined the attitudes of landholders managing privately-protected areas, very little research has been conducted into how to evaluate these important conservation programmes. This study aims to begin to fill this knowledge gap by developing and trialing an approach that can provide

evidence to support the future design, management, and monitoring and evaluation of privately- protected area programmes and, in this specific instance, the Biodiversity Stewardship Programme overseen by CapeNature, the organization responsible for on- and off-reserve conservation in the Western Cape province of South Africa. This aim is founded upon the premise that employing empirical evaluations can assist the BSP in the transition towards evidence-based conservation practices (Wright, 2013).

Demonstrated effectiveness of conservation programmes is typically required by both donors and the broader conservation community as resources are limited and hence prioritization is required for directing implementation (Ferraro and Pattanayak, 2006; Kapos et al., 2009; Margoluis et al., 2009). Over the past two decades, monitoring and evaluation has become a more prominent part of the science and practice of conservation, embodying a shift in understanding the effectiveness of conservation activities through the shift from focusing upon inputs and outputs to outcomes and impact (Ferraro and Pattanayak, 2006).

The objective of conservation monitoring and evaluation is to assess initiative and programme effectiveness and efficiency (Salafsky and Margoluis, 2003) and provide conservation practitioners with evidence on which to base their conservation decision-making (Sutherland et al., 2004).

The activities of monitoring and evaluation are often conflated. Monitoring is an activity that involves systematically and regularly gathering data on the

quality and progress (or not) of a programme over its life span. Evaluation measures outcomes against a set of criteria to determine a programme's effectiveness. Both can be quantitative and/or qualitative, and consisting of experimental, quasi-experimental, and non-experimental designs (Margoluis et al., 2009). Conservation programme evaluation is necessary throughout the life of an activity and should not center solely on outcomes, as monitoring and evaluation can signal the need for, and drive, adaptation if problems arise (Stem et al., 2005).

Greater emphasis is required upon evaluating the effectiveness of conservation initiatives, including privately-protected area programmes in both ecological *and* social terms (Merenlender et al., 2004; Rissman and Sayre, 2012). Rissman and Sayre (2012) call for an evaluation of landholder outcomes as well as impacts on biodiversity. Landholder motivations should be understood before a landholder is recruited into a programme (Selinske et al. 2015) as these reflect the factors that attract landholders to participate in specific initiatives. Motivations for participation in privately-protected area programmes have been relatively widely documented, but typically only in one-off studies that lack longitudinal assessment, meaning that little is understood about changes in landholder motivations over time.

These motivations, along with landholder's satisfaction with a stewardship programme, should be monitored throughout the duration of any contractual agreement signed between landholders and the organizations involved in a programme. Landholder satisfaction is thought to be linked to the likelihood

that landholders will commit to privately-protected area programmes (Selinske et al. 2015), though this is yet to be demonstrated. Landholder satisfaction is not commonly assessed for privately-protected area programmes. The assumption in the literature is that motivations equate to landholder commitment. However, it has been demonstrated that landholder motivations for joining, and satisfaction with, privately-protected area programmes are different factors (Selinske et al. 2015). This mirrors work in other sectors where participants voluntarily join programmes, including the healthcare and education sectors (Selinske et al. 2015). This finding suggests that the explicit monitoring (i.e., auditing) of the degree to which landholders, firstly, remain in a programme over time (i.e., retention), and secondly, comply with management agreements (i.e., compliance) should be regularly assessed. This can be complemented with data on the status of biodiversity and conservation and human well-being values on a property so that links can be sought between the ecological and social dimensions of privately-protected area programmes. This will allow the identification of factors that contribute to people's likelihood of upholding the terms of their agreement.

These factors are hypothesized to link to the elements of which a stewardship programme is comprised (Table 2). These primarily include a covenant, a management plan and extension support. For this reason, monitoring and evaluation of the extension support activities is essential. These could entail the quality of the interactions between extension staff and landholders, their support for landholder's conservation activities (e.g., assistance with securing external funding), and the information they provide.

The research detailed in this chapter has employed an approach to evaluating the social dimension of the CapeNature Biodiversity Stewardship Programme (BSP), and more specifically the extension services that support their effectiveness. It combines a more traditional programme evaluation framework with psychometric analytical techniques not commonly applied to conservation stewardship programmes, through which one can begin to understand the complex relations that exist between a conservation programme, the organizations that manage and are involved in it, and the private landholders joining and participating in the programme.

3.2 Methods

3.2.1 *The Study Area*

The Cape Floristic Region (CFR) is recognized as a biodiversity 'hotspot', meaning it contains globally important biodiversity (Cowling et al. 1996; Mittermeier et al. 2004). The region, known similarly as the Cape Floral Kingdom, is also the smallest of the world's six floral kingdoms, and exhibits the highest density of endemic species per unit area. The region exhibits a Mediterranean climate, having predominantly winter rainfall and a mild climate. The landscape comprises flat lowland coastal plains rising slowly inland to a rugged east-west trending upland known as the Cape Fold Mountain belt. The vegetation of the CFR is commonly known as fynbos, and is dominated by heathlands and shrublands. It comprises outstanding levels of plant endemism: almost 6,000 plant species are endemic, about 80% of all plants in the region. It is likely that a significant number of plant species

remain to be found, given these high levels of endemism and the naturally 'patchy' nature of fynbos (Cowling et al. 2010). Characteristic plant families include Proteaceae, Leucospermum, and Leucadendron Restionaceae and Ericaceae species. Renosterveld (literally 'rhinoceros bush') is an important plant community recognized for its high conservation value. In contrast to the plant communities, the animal community is comparatively less striking, exhibiting few endemic species. Endemic species listed on the IUCN Red List or those susceptible to human activities include: the Geometric tortoise (*Psammobates tentorius*), the Small-scaled leaf-toed gecko (*Goggia microlepidota*), the Orange-breasted sunbird (*Nectarinia violacea*) and Cape francolin (*Francolinus capensis*), the Cape platanna (*Xenops gilli*), the Cape rain frog (*Breviceps gibbosus*), the Table Mountain ghost frog (*Heleophryne rosei*) and the Cape caco (*Cacosternum capense*). Endemic mammal species include two Cape golden mole species (*Chrysochloris asiatica* and *C. visagiei*), the Grysbok (*Raphicerus melanotis*) and the Bontebok (*Damaliscus dorcasdorcas*).

The major extent of the CFR is located within the borders of the Western Cape Province of South Africa. The province exhibits variable levels of human population density. Inhabitants are primarily Cape Colored people, and originate collectively from the pre-colonial resident Khoisan people, Bantu-speaking Africans such as Xhosa, English and Dutch settlers, and Malaysian slaves. Khoisan (also referred to as Bushmen) cave paintings are present throughout the Cape Fold Mountains demonstrating the long history of human habitation. The majority of people speak, primarily, Afrikaans and English.

There are many pressures upon the biodiversity of the Western Cape. These include:

- Altered fire regimes
- Land transformation and degradation
- Climate change
- Illegal harvesting
- Over abstraction of water

PPAs form the dominant approach to conservation in the Western Cape province, covering a greater land area than the formally designated government-run protected area network (SANBI & DEAT 2008). The BSP formally began in 2002 and is run by CapeNature, the province's protected area agency. Since its inception it has enrolled some 127,550 ha of private lands through a variety of conservation mechanisms (Figure 2). The intention is to add a further 50,000 ha with a target of achieving this by about 2020 (Turner 2012). This ambitious target has proven a real struggle to achieve mainly because of the lack of capacity especially permanent extension and negotiation staff on-the-ground (von Hase et al. 2010). Despite this drive to expand the PPA network, funding has been consistently cut by central provincial government. Recent initiatives to grapple with the challenges that this poses include the recent establishment of the Protected Area Expansion & Stewardship Reference Group, which includes a diverse range of stakeholders supporting CapeNature to meet their PPA goals. This is

challenging due to the increasing number of landholders wishing to secure the biodiversity and conservation values of the landscapes they manage through the establishment of formal PPAs over their properties.

Earlier research associated with the BSP has found that landholders have been dissatisfied with elements of the BSP. The level of extension support is one such element. Landowner dissatisfaction represents a potentially serious threat to the BSP. Diminishing landowner commitment coupled with ever-growing pressures on biodiversity and continuously declining government funding could drive landholders to leave the BSP, as over 60% of landowners have non-binding agreements or contracts of 30 years or less (Von Hase et al. 2010). This could prove catastrophic for one of the world's richest biodiversity hotspots

3.2.2 Selecting participants

Landholders were defined as those people having formal property rights to utilize a property, which includes owners, as well as those legally utilizing land but who do not own the land they work, such as lessees. Interviewees for this research included people who were registered as participants in the BSP and were located using CapeNature records. Stewardship landholders' mail and email addresses were obtained from the stewardship programme database provided by the stewardship programme database manager. People who were at the time negotiating their enrolment in the BSP were also included (Selinske, 2013).

All landholders had voluntarily enrolled their properties into one of three (of a total of five) PPA categories of protection under the BSP. From the most to least secure, these included (per Figure 2):

- 1) Nature Reserves
- 2) Protected Environment
- 3) Biodiversity Management Agreements
- 4) Biodiversity Agreement
- 5) Biodiversity Partnership Area;

The landholders managing lands located in areas identified as priorities for conservation in CapeNature's Protected Area Expansion Strategy are targeted for higher levels of service, following their commitment to the longer term Contract Nature Reserve category.

3.2.3 The Survey Instrument

3.2.3.1 Psychometric theory

Psychometric tests are used to reliably and validly determine a set of motivations of generic relevance to particular behaviours or attitudes. The tests involve an inventory of a set of items that reflect the varied psychological and social functions of the attitude in question, generally identified through conceptual analysis (Clary et al, 1998). This “functional approach” focuses on the psychological needs that attitudes serve and addresses the reasons and purposes, the needs and goals, the plans and motives that underlie and generate psychological phenomena (Snyder and Cantor, 1999). Attitudes help

people deal with inner, social and reality demands, as well as express their values and find structure and meaning in the world around them (Milfont, 2009) therefore, psychometric tests are valuable tools to help understand peoples behaviour and responses to various situations.

3.2.3.2 Questionnaire design

This study was used to determine the satisfaction of the landholders towards the BSP, as well as their motivations for, and expectations of, the programme, and also the importance of extension in the stewardship programme. The survey can be of particular use in describing the characteristics of a carefully selected group of landholders involved in private land conservation. Use of a standardized questionnaire also offers the possibility of making refined descriptive assertions about the landholders involved in the BSP programme (Wright 2011).

A self-administered questionnaire was developed to the specifications presented in Babbie (2010). Dillman et al. (2009a) suggests that integrating both visual and aural communication into surveys could cause differences in the responses and as such phone surveys were not included. Mail and web surveys have been found to have comparable answers, and furthermore, mixing of survey modes may improve response rates taking in consideration the number of stewardship landholders (Dillman et al., 2009a; Millar and Dillman, 2011). In recognition of possible preferences, the survey was provided to landholders using both online and hardcopy formats, and both in Afrikaans and English languages. The web-based survey was hosted by

Qualtrics and designed in the same manner as the mailed format (Selinske 2013).

The first section of the questionnaire presented open- and closed-ended questions about the landholder's relationship with their land, and afterwards a series of questions pertaining to the BSP related to the Stewardship Functions Inventory (SFI) presented in Selinske et al. (2015). The second section of the survey presented the Willingness-to-Sell scale of Knight et al. (2010) and scales for advocacy. These scales comprised Likert statements scaled from one through five, one being strongly disagree and five being strongly agree. Some questions were negatively scaled, where appropriate. In the final section of the questionnaire demographic information was requested. The survey was developed in English and then translated into an Afrikaans version by a paid South African translator (Appendices 4).

Piloting of the survey was conducted prior to distribution with seven students from the Masters in Conservation Science course at Imperial College London, and two farmers from the Western Cape province. A pilot questionnaire was also then trailed in South Africa with two landholders not part of the BSP. The pilot interviewees felt comfortable answering all the questions and did not feel that any aspects were too probing or sensitive, advice was provided on the length of the survey keeping it short.

To keep the confidentiality and anonymity of respondents, strict guidelines were implemented that were obtained from Rhodes University following their

guidelines and permission (Gobel. 2014). Only myself, my supervisors and the BSP Programme Manager were allowed to view individual responses and results were reported collectively without identifying individual landowners (Selinske, 2012).

3.2.3.3. Interviews and Survey Delivery

Landholders were interviewed or surveyed between July 2013 and March 2014. Before survey implementation, the BSP Programme Manager (Mrs Kerry Purnell) sent an introductory email developed in collaboration with the researchers to all participating stewardship landholders informing them about the research and the research scope.

Those landholders who were *interviewed* were met at their residences where interviews were conducted face-to-face in English. Where landowners were not contactable, managers were surveyed or interviewed in their stead. In such cases, the SFI was not administered as it measured motivations to enroll which only the landowner may legally act upon. Those *surveyed* completed a web-based or self-administered postal survey in either Afrikaans or English, as they preferred. Implementation followed the tailored-designed method protocol (Dillman et al. 2009b). After the initial mailing of questionnaires, email prompts were sent weekly for four weeks to reduce the number of non-responses (Dillman et al., 2009a). Due to limited time and logistical spread of the landholders there were no additional mailings.

The returned mail surveys received were translated into English if returned in Afrikaans to facilitate analysis by co-researchers. They were then scanned and both the hardcopy and digital copies were archived. Afrikaans web-based responses were translated using Google translator. Completed hardcopy surveys were marked and saved in a filing system and scanned copies on database. Data was stored and managed in Microsoft Excel.

3.2.4 Psychometric analyses

The results of the questionnaire were analysed both quantitatively and qualitatively using multiple techniques. The R statistics package (R Development Core Team, 2012) in particular the Psych Package (Revelle, 2013), and Microsoft Excel were used for quantitative analysis. This study was interested in how language, capacity, residency, goals, contractual conditions, extension officer relationships were linked to motivations and satisfaction outcomes. Names of participating landholders were retained so as to allow CapeNature identify individual's satisfaction levels. Groups' profiles were used to reveal differences in satisfaction levels.

Qualitative analysis of responses to open-ended questions was conducted and the content analysed according to established methods (Kitchin and Tate, 2000). Preset codes were based on familiarity with the programme and emergent codes were also established during analysis. Answers were categorized and themed, and after interpretation, corroborated within their context to ensure robust analysis. Initial coding was guided by Yoshikoder

(Miller, 2013), an open-source content analysis software, used to highlight commonly used words.

The SFI sub-scale responses were analysed separately. The validity, reliability and internal consistency of SFI sub-scales were assessed using the coefficients Cronbach's Alpha (α) and Revelle's Beta (β). Although Cronbach's Alpha is the most common test of internal consistency in the literatures of many disciplines, it assigns higher variance levels if a scale has multi-dimensionality, and as such should be reported in conjunction with Revelle's Beta, a measurement of multi-dimensionality (Revelle, 1979). McDonald's Hierarchical Omega (ω_h) provides a more robust test (Zinbarg et al., 2005). Adequate values for Cronbach's Alpha and Revelle's Beta are 0.70. Cronbach's Alpha values greater than 0.89 are considered too high and may reflect redundant scale items (Boyle, 1991). Within each subscale items that contributed weakness to the subscale's internal consistency were removed, thereby raising the Cronbach's Alpha value of a sub-scale.

The ICLUST function in R was applied on each sub-scale as a quasi-confirmatory approach to explore the structure of construct observations. The cluster analyses produced cluster structures and item values to explore latent relationships between the constructs. Two principal component analyses (PCA) with promax and varimax rotations were used to complement the results from the ICLUST analysis. A PCA factor analysis determined if the items comprising each construct were structured according to the pre-existing

constructs or if items loaded differently, exposing unanticipated relationships between subscales.

Means and inter-item correlation values were calculated for all constructs. A Spearman's correlation coefficient was used to test for relationships between the distribution free, dependent variables of the responses, such as means of motivations and motivation outcomes and satisfaction. A Bonferonni's Correction was used to prevent any Type I errors.

3.3 Results

3.3.1 Landholders Demographics

Questionnaires were distributed to the 88 landholders participating in the BSP. A total of 85% (n=75) responded, with 40 being interviewed and 35 surveyed. Landholders engaged with the Nature Reserve type PPAs (i.e., in perpetuity contracts) comprising 40% of the sample. Most respondents spoke English (59%) or Afrikaans (39%) at home. Three-quarters derived their primary income from their covenanted property. Landholders tended to be older, with 63% aged over 50 years of age.

3.3.2 Motivations for Joining, and Satisfaction with, the BSP

3.3.2.1 Motivations

Of the original 12 sub-scales, three displayed structural integrity when subjected to exploratory factor analysis. These were Business, Stewardship Extension and Social (Normative). Two sub-scales of the VFI – Ego Protection and Ego Enhancement – loaded as one factor renamed Ego

Maintenance (in contrast to Clary et al. 1998). The Conservation Values subscale was robust and loaded with two Place Attachment items. The loading of the Stewardship Partnership and Understanding factor loaded as a new single Social Learning factor. Place Attachment remained comprising three items. Low factor loadings (<0.32) were displayed by the Perceived Behavior Control, Social Networking, and Stewardship Incentives sub-scales and so were excluded. In total, seven sub-scales were identified.

Table 6: – Factor loading patterns of the Stewardship Functions Inventory derived from exploratory factor analysis.

Subscale	Factors						
	1	2	3	4	5	6	7
Conservation values	0.62 0.65 0.74 0.54 0.81						
Business		0.81 0.77 0.73 0.93 0.82					
Ego enhancement			0.32 0.77 0.54 0.53				
Ego protection			0.74 0.60 0.79 0.79				
Understanding				0.40 0.77 0.76 0.66			

		0.56	
Stewardship Partnership		0.39	
		0.44	
		0.68	
		0.35	
Place Attachment	0.61		
		0.51	
		0.41	
		0.64	
	0.52		
Stewardship Extension			0.44
			0.38
			0.56
			0.51
			0.65
Social (Normative)			0.42
			0.47
			0.66
			0.61
			0.36

Strong internal consistency (i.e., $\omega_h \geq 0.60$) was exhibited by five of the seven 'new' sub-scales, which included: Conservation Values, Place Attachment, Social Learning (Understanding and Partnership), Business and Ego Maintenance (Ego Enhancement and Ego Protection). Two had inadequate internal consistency ($0.50 > \omega_h > 0.60$). The satisfaction scale was split when tested for internal consistency and reliability into two sub-scales: Commitment and Satisfaction.

Means of the nine motivation subscales were highest for Conservation Values (4.60), Place Attachment (4.30), and Social Learning (Understanding +

Partnership) (4.20). The subscales of Ego Maintenance (Ego Enhancement + Ego Protection) (3.20) and Business (3.40) were the lowest two means. Using the motivation factors as independent variables and satisfaction as the dependent variable, a multiple regression analysis showed a correlation between the Social Learning (Understanding + Partnership) and the Satisfaction subscales. A correlation also existed between landholder's Commitment to remaining in the program (the dependent variable) and Satisfaction (the independent variable).

3.3.2.2 Benefits

Landholders reported that the main benefit of being involved in the BSP was being able to secure assistance with land management (68.6%), particularly alien plant clearing. Five landowners felt they received no benefit from involvement in the BSP. Incentives are offered as potential benefits to landholders and aim to ensure their commitment. However, the mood of responses was variable when asked broadly about the benefits derived from incentives.

Table 7: Respondents feelings relating to the incentives provided by the Biodiversity Stewardship Programme as they influence landholder's satisfaction.

Feelings about BSP Incentives	Individual Remarks
Financial incentives have been beneficial	“Property tax incentives gives us more cash to inject into other projects
Have not had communication in regard to incentives	“We have no or little information regarding funding”
Have not received property tax exclusion as a result of contract delays	“Because we are not declared as a contract nature reserve yet, we have spent in the last six years almost R6000 per year on municipal tax. We could have saved this [R36000] if we were declared in the first year”
Would like more social recognition	“There needs to be more recognition and public awareness of what farmers are contributing to sustainability and the preservation of our heritage”
Positive general management incentives	“I have not experienced the full benefits of the programme, as we are not yet fully enrolled in the project. The benefits that I have enjoyed so far (funding, technical assistance- managing as well as labour for clearing) has been invaluable to our farm.”

3.3.2.3 Satisfaction

Overall, mean satisfaction values were relatively high (0.80). Five categories of landholders were observable from the qualitative data regarding satisfactions levels: those completely satisfied (42.6%); those partially satisfied but who recognized that CapeNature is managing as well as possible given it's limited resources (42.6%); those previously dissatisfied but who believe that the program improved over the previous 12 months (6.7%); and those dissatisfied with a specific program component (5.30%). Only 2.7% were entirely dissatisfied.

The results indicated that the perception from CapeNature staff (the author included) that landowners are dissatisfied with the programme is misplaced. It did indicate that certain key activities in the programme can improve to increase the overall satisfaction of the programme, for example, an increasing number of landowner site visits which links to improved extension capacity and a speeding-up of the legal covenant negotiation process.

Table 8: Statistics describing the scales of the Stewardship Functions Inventory. Italicized motivations are original VFI Motivations that are italicized are those from the original Volunteer Functions Inventory.

Subscale	Mean ($\bar{x}$)	Standard Deviation (σ)	McDonald's Omega (ω_h)	Inter-item correlation (r)
<i>Business</i>	3.40	0.96	0.88	0.68
<i>Conservation Values</i>	4.60	0.43	0.72	0.48
Ego Maintenance (<i>Ego Enhancement and Ego Protection</i>)	3.20	0.72	0.72	0.45
Place Attachment	4.30	0.65	0.74	0.45
Social Learning (<i>Understanding and Partnership</i>)	4.20	0.50	0.67	0.38
Social (Normative)	4.00	0.37	0.59	0.37
Stewardship Extension	3.70	0.76	0.54	0.38
Satisfaction	3.80	0.90	0.64	0.48
Commitment	4.00	1.20	0.80	0.67
Willingness-to-Sell	1.70	0.63	0.77	0.54

Table 9: Selinske. SFI motivations predict BSP satisfaction, and BSP satisfaction predicts commitment using multiple regressions analysis. Asterisks designate significance level (*P < 0.05; **P < 0.001; ns = not significant). ^a Satisfaction predicting Commitment.

Independent variable	Coefficient estimate (B)	Standard Error (SE)	t Value	P Value
<i>Business</i>				ns
<i>Conservation Values</i>				ns
Ego Maintenance (<i>Ego Enhancement and Ego Protection</i>)				ns
Place Attachment				ns
Social Learning (<i>Understanding and Partnership</i>)	0.88		7.70	**
Social (Normative)				ns
Stewardship Extension				ns
Satisfaction ^a	0.56		2.05	*
Adjusted R ²		0.63		
F-statistic		15.7		

3.3.3 Findings on Landholder's Attitudes Towards Extension Services

3.3.3.1 Landholder Satisfaction

Landholder satisfaction could be categorized across five broad classes, which included:

1. Completely satisfied;
2. Partially satisfied, but feel that CapeNature is under-resourced and is doing the best possible with what few resources they have;
3. Previously unsatisfied, but feel the programme has improved in the last year (possibly by the assignment of an extension officer); and
4. Dissatisfied with a specific component of the programme, or the entire programme.
5. Entirely dissatisfied

These satisfaction categories were explained by the two factors Conservation Values and Partnership (a component of the Social Learning sub-scale). Satisfaction was most commonly expressed by landholders as being driven by how the stewardship contract provided protection for their land (i.e., Conservation Values). Fulfilment towards satisfaction was, for some, embodied in simply securing the contract itself, with the other potential benefits of being involved in the programme being reported as side benefits. However, a substantial subset of landholders felt that completion of the covenant contract was protracted, which left them feeling disenfranchised from the beginning of their involvement in the BSP.

Dissatisfaction was expressed by landholders when they felt that their Conservation Values were compromised, for example, where CapeNature or those it had contracted to manage invasive alien plants were perceived to be underperforming. Landowners felt funding used for management of invasive alien plants was being wasted, typically because follow-up clearing was not undertaken or the contractor performed a poor initial clearing. Others who perceived delays with CapeNature following-up on invasive alien plant management and who cared about the declines biodiversity were concerned that biodiversity might suffer where invasive alien plants were left untreated.

Landholders who presented positive responses were typically extremely pleased with the extension support provided by CapeNature and the financial support that they received. Over half of all landholders felt positive about the BSP incentives they were receiving (Table 2). Positive responses were common about the quality of information received from Extension Officers, but landholders were dissatisfied with the quantity of information received. Negative responses were often expressed as landholders feeling that they had fulfilled their agreed responsibilities (i.e., the protection of their land), but that CapeNature had not met their responsibilities (i.e., providing support). The Extension Officer represented the day-to-day face of the CapeNature/Landholder partnership, meaning complaints were directed at the Extension Officer/Landholder relationship but not necessarily the individual Extension Officer. As such, limited communication and management support were the main factors driving landholder dissatisfaction. Landowners sought increased support from Extension Officers (some had not received a single

visit within the last couple of years) with many of the landowners seeking three or more visits per year.

Many landholders gave both positive and negative responses when asked about CapeNature's level of organisation. The general feeling was that the competency of CapeNature staff was high, but the number of staff was insufficient to meet landholder's perceived needs. Landholders felt that the system as a whole was over-burdened by bureaucracy, and resulted, for example, in the unreasonably lengthy time taken to finalise covenant contracts (Table 2). One landholder reported waiting eight years for a contract to be finalised. This perceived excessive bureaucracy was seen as hindering communication from both CapeNature and the Extension Officers. Requests were also made by landholders for greater recognition from society for the important role they play in ensuring the persistence of nature.

Table 10: Respondents feelings relating to their satisfaction with the extension service provided by the Biodiversity Stewardship Programme.

Feelings about BSP Extension	Individual Remarks
Information provided is sufficient	“All the representatives I have met have been exceptional”
Sufficient contact	“Quite happy. I know I only have to pick up the phone”
More visits needed	“Totally insufficient...completely inaccessible due to the lack of capacity within CN
No visits received	“We had no contact what so ever except for one occasion which we initiated”
Information is less than adequate	“Mediocre at best”

Table 11: Respondent's feelings relating to the capacity of the Biodiversity Stewardship Programme to provide a satisfactory extension service.

Feelings about BSP Capacity	Individual Remarks
<u>Positive</u>	
Well organised/ excellent staff	"Staff are very committed and passionate"
Improved	"Conditions have improved as there is now dedicated personnel available"
<u>Negative</u>	
Understaffed	"Insufficient staff/extension workers"
Hindered by government bureaucracy	"Fairly well organised but very slow responses from the provincial government (i.e ...two years so far and deeds are still not legally in the province)"
Organisational efficiency	"While our field officers are efficient and competent, friendly and follow through..., it seems that there are gaps in the system which makes follow through in terms of real benefit for partners really difficult"
Communication	"As of yet no effective and active communication efforts"

3.3.4 Willingness-to-sell

Willingness-to-Sell was low: Most landholders (88%) responded that they would leave their contracted property to a member of their family. Only two landholders stated they intended to sell their land within the next five years.

3.4 Discussion

This study has provided the most detailed assessment of landholders and their attitudes towards extension support yet completed in the Western Cape province of South Africa. Through this, a broader insight into the role extension plays in driving landholder satisfaction towards the BSP has been provided. The information provided can be used as a benchmark against which future refinements can be evaluated and for refining the BSP.

At the commencement of this study, CapeNature had suspected that landholder satisfaction with the BSP was low, but were unsure precisely how poor it might be. The majority of landholders are at least partially satisfied with the programme. One quarter are entirely satisfied, with near half partially satisfied, but acknowledge that CapeNature is under resourced but is delivering a service commensurate with the limited resources available. Five were previously dissatisfied but believe the BSP has sufficiently improved. Most landholders would renew their contract when renewal is due.

3.4.1 Landholder Motivations and Satisfaction

Landholder's motivations for joining the BSP comprise a diverse range of reasons, including: protection or conservation of rare species, rare habitat, the environment or from development; assistance with land and alien plant management; partnership and collaboration with CapeNature; protecting land for future generations; eco-labeling of products and promotions; tax incentives; contributing to larger conservation initiatives such as biosphere reserves; positive feelings associated with nature and the protection of nature.

It is important to note that landholder's motivations for joining the BSP do not drive landholder satisfaction. Factors driving satisfaction include: landowners' motivations as they trade-off against expectations and perceived benefits of their interactions with CapeNature. Partnership satisfaction is driven by the relationship with an extension officer; communication about contract negotiations (progress with e.g. legal processes); available incentives (which varies from landowner and management needs); land management support; and sense of belonging. At least three visits a year by an extension officer is often sought (Selinske, 2013).

The reasons why a landholder joins the BSP are different to the reasons why they commit to remain in the programme. Different strategies are therefore required for engaging landholders to encourage them to enter the BSP versus securing their ongoing commitment once they are in the programme. This appears not to have been widely recognized in the peer-reviewed literature, as most studies assessing landholder's attitudes are focused firmly upon motivations.

3.4.2 Role of the Extension Officer

The role of extension services in ensuring the effectiveness of PPA initiatives has been little discussed in the peer-reviewed literature. This present study highlights the essential role of Extension Officers to the BSP. Informal discussions between the authors and practitioners in other parts of the world (e.g., J. Fitzsimons pers. comm.), along with recent research in Australia (Selinske et al., in review), suggest that face-to-face contact between stakeholders involved in PPA initiatives, especially covenanting organisations and landholders, is crucial for securing landholder satisfaction (and then, in theory, their commitment). The results presented here confirm practitioner's views, and it is not unreasonable to suggest that this finding will be present in programmes in other parts of the world.

The Extension Officer clearly occupies a fundamental role in promoting the partnerships and knowledge interfacing (Roux et al. 2006) required to secure valued nature, being the connection between landholders and CapeNature. Whilst the importance of the role of Extension Staff seems generally recognized by those working at the 'coal face' in the Western Cape province, the role appears to be all too commonly the first cut when budgets get squeezed (J. Coetzee, personal observation; A.T. Knight, pers. comm.), and is under-appreciated by CapeNature senior management staff. In contrast, greater support of landholders through Extension Officers is required. Currently, not all landholders receive an annual visit but most (on average) desire three visits per annum.

One consistent theme gleaned from this study is the fundamental importance of strong, regular communication. Face-to-face contact with Extension Officers, and to a lesser degree a social learning relationship with CapeNature, and potentially the research community, is highly valued by the majority of landholders. This is also recognized by the Extension Officers themselves (personal observation), but seems little understood and appreciated by CapeNature senior management staff (Selinske, 2012). More funding is clearly required to employ a greater number of Extension Officers. Ensuring that CapeNature senior management appreciate the importance of strong communication and engagement as being essential is a prerequisite for having them allocate sufficient funding to extension support compared other activities for which the agency is responsible (Selinske, 2013). It is important to note that production landowners prefer continued education and extension officer support which is more costly to the BSP (Moon et al., 2012).

Extension Officers service different sets of landholders and anecdotal evidence also suggest that Extension Officers differ substantially in their efficacy. Those that are delivering sub-optimal service to landholders should be counseled and trained within a larger training programme focused upon communication and negotiation skills. This could assist in optimising the return-on-investment of interactions between landholders and Extension Officers.

3.4.3 Prioritising Investments in Extension Support for Landholders

There is a clear trade-off in this regard between the effort invested in individual landholders and the conservation outcomes delivered. A large investment of time and resources in a landholder whose biodiversity is relatively unimportant delivers a low return-on-investment. This raises an important issue: in whom, and to what degree, is investment in landholder's prioritized (Ting Tek Wah et al., in prep.) Criteria for allocating effort should include:

1. Conservation priority (i.e., Critical Biodiversity Areas);
2. Financial investment required (e.g., costs of removing invasive alien plants, fencing and visits to landholders);
3. Landholder satisfaction (esp., drivers of satisfaction)

Landholders with high priority biodiversity (e.g., located in Critical Biodiversity Areas) and low investment requirements (e.g., requesting few visits and with easily controlled invasive alien plants) represent a strong return-on-investment. In the context of this study, this raises the question "Does CapeNature invest in highly satisfied landholders to maintain high levels of satisfaction, or do they invest in landholders who are dissatisfied with the aim of increasing their satisfaction levels?" This depends to some degree on understanding the drivers of individual landholder's satisfaction. This research provides this information. With this knowledge in hand, the opportunity is provided with landholders in high conservation priority areas whose satisfaction is driven by a desire for regular Extension Officer visits for

CapeNature to drive negotiations with the promise of high levels of contact in exchange for signing into top-tier (i.e., Nature Reserve) covenant agreements. Data on conservation priority and financial investment required are readily available from existing spatial analyses and CapeNature programme accounting.

Meeting the costs of these investments depends upon central government allocating levels of funding for the entire agency that allows the extension component of the BSP to be expanded. Unfortunately, this does not appear likely in the current political climate, and is reflected with the recent spontaneous establishment of the multi-stakeholder Land Protected Area & Stewardship Reference Group. Given that it is probably highly unlikely that larger quantities of funding will be allocated to CapeNature, research into, and trialing and evaluation of, social media (e.g., Facebook, Twitter) as potential replacements for face-to-face contact could be usefully trialed.

3.4.4 A Systemic Approach to Managing Extension Support

Most studies in the peer-reviewed literature focus solely upon documenting landholder's attitudes, appearing to assume that landholders are the primary potential barriers hindering the effectiveness of PPA programmes. However, the findings in this study suggest that an understanding of PPA programmes, such as the BSP, must include knowledge of not simply landholders, but of all stakeholders and their interactions. For example, Extension Officers that offer landholders a poor level of service may engender negative feelings towards a conservation agency and thereby contribute towards compromising

landholder commitment. Whether or not a decline in satisfaction leads to a decline in landholder's commitment remains to be tested. Research aimed at determining the degree to which satisfaction and commitment are linked would prove useful.

With this in mind, the BSP, and PPA programmes more generally, should be conceptualized, studied and managed as systems, in much the same way that landscape ecology promotes a systemic understanding of nature. The findings of this research indicate that the linear conceptual model of landholders (driven by their attitudes) impacting landscapes is erroneous, and as such, hinders the development of effective PPA initiatives. This multi-stakeholder perspective is clear from the research provided in this chapter, as well as by the findings presented through the logic models in Chapter Two. The influences and feedbacks between stakeholders may be as, or potentially more, important than landholder's attitudes in isolation for driving behaviour. As examples from other contexts, gorillas and rhino have been killed in acts of (what appears to be) spite without the animals being harvested. This poaching behavior is hypothesized to be the result of antagonistic between poachers and conservation organization staff. The strategic design of relationships between landholders and covenanting organisations (inclusive of other relevant stakeholders) to promote landholder satisfaction could be a worthwhile research direction. Research is progressing in this direction (e.g., Ting Tek Wah, 2014).

This systemic perspective of the BSP has implications of a fundamental type for the design of PPA programmes more generally. Firstly, the view that PPA initiatives represent a cheap and simple solution to contributing towards Aichi Targets and the Sustainable Development Goals is erroneous. The view that covenants can be signed and then landholders' left to manage the valued nature on their land fails to acknowledge the functions that drive landholder satisfaction, and potentially, commitment, and hence the security of the valued nature that PPA programmes aim to conserve. If commitment declines, so too potentially do conservation values. This is a hypothesis that requires more research and is one that can benefit the BSP to ensure that the conservation gains that the programme aims to achieve can be secured.

Secondly, contexts in which PPAs operate are invariably complex, dynamic and diverse, ensuring that PPA partnerships, such as that exhibited in this study, remain in a perpetual hunt for optimal mixes of mechanisms (i.e., instruments, incentives and institutions; Young et al. 1996) that trade-off and balance the needs of all stakeholders in equitable, sustainable and resilient ways. This necessitates the establishment of social learning institutions (Knight et al. 2006) that can develop understandings of PPA contexts (i.e., conceptual models), collaboratively design optimal mechanism mixes (e.g., Table 2, p.35), test them, celebrate the successes and grapple with the failures, and then reconceptualise and trial new targeted optimal mechanism mixes. Such a foundation for social learning is already present, albeit untapped, within the landholders of the BSP. They express a desire to learn about how to more effectively manage their land, and to do this in partnership

with CapeNature. They express a sense of custodianship that they take very seriously.

3.4.5 Financing the BSP

Funding for the BSP has been cut consistently since 2005. In the context of this ever-declining financial support, one approach for appealing to landholders Conservation Value function (a primary function in determining motivations and satisfaction) would be to improve the strategic deployment of Working for Water teams. Landholders have a legal obligation to remove invasive alien plants from their properties under the Conservation of Agricultural Resources ACT, but this is invariably a relatively expensive land management activity. The findings of this present study (and the qualitative insights informally gleaned from it) suggests that the financial savings, coupled with the sense of relief from knowing that a legal obligation has been met, would be valued and appreciated by landholders. This support, provided by government, may also appeal to landholder's desire for greater recognition of their contribution to society, as it is likely to be interpreted as government assisting them with their legal obligations and their land management efforts. This, too, may be viewed favorably by government, given the political importance of job creation through the Working for Water programme.

3.4.6 Improving the Research

This study could be improved in several ways. Firstly, with greater time for the research, the study could have probably sampled close to 100% of landholders signed-up to the BSP. This would have provided a

comprehensive assessment. It is unlikely, however, that this would alter the findings of this study given the relatively small proportion of landholders not surveyed. Secondly, given this incomplete sampling, testing for non-response bias could have been conducted and provided greater confidence in the results, as there is a probability that unresponsive landholders represent a subset of landholder presenting a specific set of atypical characteristics. If these are landholders that are highly dissatisfied, then this study has over-estimated landholder satisfaction. Thirdly, securing the data for this study using only interviews, and not the mix of interviews and web-based and postal surveys actually adopted, would improve the robustness of the study, as 1) face-to-face interviews may secure more reliable and detailed responses, as the interviewer can prompt interviewees and build trust; and 2) avoid the uncertainties of differences in responses between the different types of methods.

Having provided this benchmark assessment, there are important pragmatic directions in which this research can be expanded and applied. Whilst the study had an excellent response rate of 85%, the sample represents landholders who have signed covenanting contracts with CapeNature. It is to be expected that these landholders would express pro-conservation attitudes, behaviours and values, as the BSP pre-selects people displaying these characteristics give its goals. Given substantially more time, this study would have benefited from surveying a control set of landholders exhibiting similar characteristics to those enrolled in the BSP, for example those neighboring BSP participants. This would provide insights to determine if BSP landholders

are significantly different to those not enrolled, thereby providing a more realistic picture of the status of landholder's pro-conservation (or not) attitudes, behaviours and values.

3.4.7 Moving Forward into the Future

This research provides information that is useful for guiding the proactive recruitment of landholders into the BSP. This offers the opportunity for securing the 'biggest-bang-for-buck' (i.e., return-on-investment) with what limited funding is available for stewardship, and more specifically, extension support. Landholders who present characteristics that are likely to manifest higher levels of potential satisfaction for the least investment can be targeted for recruitment. The obvious characteristic to seek is that of requiring fewest visits from an Extension Officer to maintain landholder satisfaction, as staff costs are the largest cost associated with BSP operations.

Such information on the human and social dimensions of a PPA context could be complemented with information on its ecological dimensions (i.e., areas displaying elements of nature important for achieving conservation goals, such as species or vegetation communities under human pressure), as well as economic dimensions (such as land management practices that reduce costs) (Knight et al. 2011b) and dimensions of governance systems that improve pro-conservation social norms and social learning. In the first instance, CapeNature has a five-year spatially-explicit strategy for proactive recruitment of landholders into the BSP based on high-value elements of nature, primarily Critical Biodiversity Areas. Further, landowners with

properties displaying major invasive alien plant problems could be avoided (or included if they have the resources to ensure effective invasive alien plant management). This would shift the current recruitment approach from one driven by conservation value (i.e., important species and vegetation communities) to conservation priority (valued nature + threat) and, ideally, to conservation opportunity (Knight et al. 2010) where the diverse factors defining PPA initiatives in the context of complex social-ecological systems are reflected more holistically in spatial conservation prioritisations, and conservation planning more generally.

Results of this research indicate goodwill on the part of landholders towards the BSP, and CapeNature, where there are tangible attempts by the agency to improve the programme. It is apparent that such actions have, in the past, shifted a significant proportion of landholders from being previously dissatisfied to being satisfied with the BSP. Small investments by CapeNature in carefully targeted, currently problematic, leverage points could provide significant increases in landholder satisfaction. This necessitates careful consideration of what mix of mechanisms (i.e., instruments, incentives and institutions) should comprise the structure of the BSP. Many of the components of a potentially “optimal” (Young et al. 1996) mix of mechanism are already present (e.g., strong legislation, covenanting process, financial incentives). Strategic, targeted refinements of mechanisms and their interactions could pay dividends. For example, complementary analyses modeling near-optimal numbers of visits by Extension Officers to landholders have the potential to deliver greater return-on-investment through substantial

cost-savings within extension support budgets for activities that drive pro-conservation attitudes (Ting Tek Wah et al., in prep.)

3.4.8 Conclusions

The findings of this research should be viewed as an opportunity for learning how to improve the BSP, rather than as an indictment of CapeNature. Consistent and repeated funding cuts have limited the organisations ability to meet expectations. One irony in this regard is that South Africa has committed firmly to achieving Aichi Targets and the Sustainable Development Goals but is failing to apply a relatively cost-efficient mechanism (i.e., PPAs) when it would rather not spend large amounts of funding on land purchase. However, perceived cost-savings (i.e., spending requirements) of a PPA initiative compared to land acquisition have been substantially under-estimated by both CapeNature and central government. Given the broad intrinsic support for achieving conservation goals (presented as the Conservation Value factor) this is both disappointing and short-sighted. Motivation and satisfaction goals of landowners should be met, as these form the basis of the development of the Stewardship Functions Inventory, whose indices provide useful direction for improving the programme.

CHAPTER 4 – CONCLUSIONS AND RECOMMENDATIONS: EXTENSION CAPACITY NEEDS OF THE BIODIVERSITY STEWARDSHIP PROGRAMME

4.1 Key Barriers and Recommendations

4.1.1 The BSP is not holistically internalised within CapeNature

Description of Key Barrier:

The BSP needs linked to internal funding, external funding and capacity not addressed internally. The Stewardship Programme at the time of study did not receive the same priority as protected areas in CapeNature.

The motivation for landowners to partner with the BSP may be a result of the access to limited financial support and key extension support assisting in the management of contracted land. It was also clear from the research there is a desire to collaborate with CapeNature as a partnership to protect nature and to be part of a larger conservation movement for positive environmental change in South Africa. These goals and desires expressed by landowners for their property regarding stewardship need to be congruent with the internal goals and objectives of CapeNature.

Looking at the findings from the research, one of the key barriers is internalising these goals and desires from landowners through the BSP. It is important that CapeNature, understand these goals and desires and not necessarily cater to all landowner goals and needs but generally understand what motivates landowners to join and stay in the programme and how to put

internal structures in place to satisfy these goals and desires, for example capacity needs regarding qualified extension. This also requires regular monitoring of landowner's satisfaction and alignment of their goals for maintaining the effectiveness of private land conservation initiatives and internal CapeNature structures. These can be duplicated in other stewardship programmes in South Africa to inform policy and internalisation of the specific programme in the organisational structures.

Recommendations

1.1) Senior role players from representative sectoral partners should collectively and explicitly negotiate the roles and responsibilities of each partner linked to the Stewardship Programme;

1.2) Given the rapidly evolving context of Private Land Conservation in the Western Cape and SA generally, CapeNature should establish an annual evaluation of the BSP and its landowners;

1.3) Establish a formal agreement (e.g., a Memorandum of Understanding / Memorandum of Agreement) across all role players to formally embed the BSP in provincial and national Protected Areas Expansion strategies regulations and legislation;

4.1.2 No explicit career path exists for extension staff involved in Stewardship Programmes

Description of Key Barrier

Currently no clear career path exists in CapeNature for extension staff practising stewardship in the BSP. Extension staff are currently either on short

term contracts funded by various external or internal funding streams with clear deadlines linked to stewardship outcomes and targets linked to their performance and job security. Currently, there are limited numbers of permanent stewardship positions in CapeNature, with some of the positions having shared functions within the organisation not linked to specific stewardship targets and goals.

Without investment into extension services and organisational capacity there cannot be investment to meet biodiversity targets. Nearly 50% of Volunteer Conservation Areas and Biodiversity Agreements hold biodiversity targeted by the CBA but these short term contracts will leave first if any motivations are left unsatisfied (Selinske, 2013).

Below some key recommendations are provided, but the most important is for the BSP to invest in stewardship extension work and extension officers. Active partnerships should promote satisfaction and, in turn, promote landowners to meet their agreed land management arrangements. This would ideally increase the likelihood of selling or passing their property onto a pro-conservation individual. Any expansion of CNBSP must be met with matched support from extension services (Pasquini et al., 2009).

Recommendations

2.1) Abolish short-term contracts for extension staff and create permanent stewardship extension positions supported by core funding within CapeNature;

2.2) In consultation with current CapeNature extension staff, senior management and partners, map potential career paths for extension staff, e.g. management positions, maintenance of existing stewardship sites, rotation of stewardship extension staff in all regions;

2.3) Mainstream career paths into CapeNature staff professional development planning with clear development goals and sustainable budgets. The human resource departments must play an important role in developing these positions understanding the complexity of extension work, especially the social aspects.

4.1.3 Landowners expectations differ from senior management in CapeNature

Description of Key Barrier:

Landowners lack a clear understanding of the targets of stewardship and the role of CapeNature, as perceived by senior CapeNature staff, even after signing of the stewardship agreements. From the landowner focus group sessions it was also clear that the landowners do not understand their role in the stewardship landscape even after signing an agreement. This also relates to their expectations linked to specific management activities set out in management plans and budgets allocated to implement these management activities.

Currently the senior management at CapeNature focus on the provincial and national conservation targets and outcomes of the programme, with limited

input towards continuing partnership building with landholders and also the maintenance of the contracted stewardship sites, with a focus on capacity needs so as to maintain the relationships and implementation of management plans in the long-term. Expectations created during engagement activities, until the point at which signage is installed for the different stewardship agreements and also specific risks are created as senior management expects specific outcomes and landowners expect specific goals from the stewardship programme. The risks are that if these goals and expectations from both parties are not achieved to mutual satisfaction the overall programme becomes dysfunctional and, in a worst case scenario, the internal structures for stewardship negotiations and management of these sites is not secured and landowners might leave the BSP, something that happened during the study (personal observation).

If committed landowners can play a major role in expanding the stewardship footprint across the landscape, and also address the capacity constraints through extension, this will promote better management practices between landowners where they are custodians of Critical Biodiversity Areas.

Recommendations

3.1) More effective induction for landholders from the start of the negotiation phase using strategic communication tools to engage them, if they require specific information (website, social media) linked to their specific extension capacity and ecological context;

3.2) Implementation of an inclusive structured and strategic annual discussion protocol for extension officers and stewardship landowners, coupled with a detailed feedback protocol to senior management in CapeNature;

3.2) Internal CapeNature social learning focus group sessions that includes all parties involved in stewardship including finance and human resources, to gather and recycle knowledge to improve the adaptive capacity of the BSP;

3.3) Annual workshop with role player representatives in CapeNature, landowners and partners to discuss programme-specific goals, responsibilities, expectations, benefits, incentives and motivations for participation;

3.4) Regular evaluation of role players understanding of programme goals, responsibilities, expectations, benefits and, if being recruited or new to the programme, motivations for joining.

4.1.4 Lack of well-trained extension capacity in stewardship programme limits protected area expansion and engagement with stewardship landowners

Description of Key Barrier:

There are currently limited external and internal training opportunities for extension staff involved in the BSP. This includes external programmes. No accredited training is available in the conservation sector in South Africa for conservation extension for both current and future extension staff. This poses a career path barrier within CapeNature and partner organisations for extension staff that hinders their career, skills and personal development, and so impacts the conservation sector more generally.

The key is to identify the specific skill set required by a good conservation extension officer and to build on these skill sets with a specific training programme developed with all partners linked to stewardship work provincially and nationally. The focus for training is currently on management activities but should be expanded to the social science aspect of extension work and working with a diverse group of landowners with different expectations and goals for stewardship. From personal experience the once of formal training programme specifically for extension run by Nelson Mandela Metropolitan University in George, South Africa, was a big success in equipping junior and senior extension staff for the diverse role of extension across different landscapes. This type of training should become standard in the formal conservation university curriculum, and not just be linked to a specific funding events with specialised qualifications linked to career growth.

Recommendations

- 4.1) Provide a review of best practice from other organisations, including well-established programmes in the agricultural sectors, for extension staff in CapeNature, inclusive of expanding knowledge exchange events with practical workshops;
- 4.2) Develop an accreditation programme for conservation stewardship extension in CapeNature, and South Africa more generally;
- 4.3) Co-develop with all role players modules in relevant university degrees (e.g., NMMU) and develop internal training programmes;

4.4) Implement a mentorship programme within role player organisations, overseen by a committee comprising representatives of role player's organisations with extension background and skills sets;

4.5) Develop and implement specific training targeted on a needs basis as identified by landowners and extension staff guided by a review of past and current systems in the BSP;

4.6) Include management training on how to design, develop and implement management plans effectively at stewardship sites, and to assist the landowners in managing these Critical Biodiversity Areas.

4.1.5 Internal and external legal processes takes too long declaring a stewardship site

Description of Key Barrier:

Landowners join the stewardship programme through different legal systems and criteria depending on the ecological status of their land, CapeNature's recommendations and the individual landowner's choice.

Due to a lack of internal legal capacity regarding skills, priorities and costs, the legal process of getting a stewardship property legally declared does currently take a very long time (2-5 years). It was clear from the landowners and extension personnel that the current delays have a negative effect on the stewardship programme, specifically satisfaction with the process, and potentially landowner commitment, and ultimately the programme.

This delay in the legal aspects also influences one of the incentives to join the stewardship programme. This specific incentive is when the property gets declared as a nature reserve landowners secure a property tax exemption. If the legal process takes too long to declare a property, the landowner loses out on this incentive until the declaration happens, in some cases more than 8 years. From this research, it is apparent that this is one of the most important areas in which to improve in the programme by speeding-up the process to formally protect Critical Biodiversity Areas in future.

Recommendations

5.1) Conduct a detailed internal and external review of the legal process from signing-up a site until declaration of the property, so as to identify and diagnose sources of delay with securing agreements with landowners;

5.2) Secure funding for, and appointment of permanent full-time (and less ideally, but potentially necessary part-time) staff to handle legal requirements of the BSP;

5.3) Allocate funding specifically dedicated to supporting the expansion of legal support services;

5.4) Develop, through consultation with representatives of role player sectors and researchers, alternative stewardship mechanisms designed to shorten the legal process, e.g., conservation servitudes.

4.1.6 Research is insufficient to support evidence-based decision-making in the BSP.

Description of Key Barrier:

Research, benefitting programme effectiveness, social outcomes for landowners, and ultimately biodiversity conservation, is improved by the inclusion of psychological theory and methods into conservation. Conservation psychology should be more widely applied throughout conservation, and has the potential, for example, by using Selinske et al. (2015) Stewardship Functions Inventory to manage programme satisfaction, to change behaviours and influence conservation outcomes (Clayton and Myers, 2009). Private land conservation will remain an attractive strategy for the protection of biodiversity due to its relative cost-effectiveness and the proportion of national biodiversity on private lands (Pence et al., 2003). As such, evaluating both the ecological and social outcomes of private land conservation efforts is critical for understanding obstacles to implementation and measuring effectiveness of the BSP (Rissman and Sayre, 2012).

Currently the majority of research that is conducted is focused on the biodiversity aspects of the BSP with limited social research being conducted, although the focus is on social science working with a variety and diverse group of landowners both provincially and nationally. The focus of research not just in the BSP should shift towards social research to determine the satisfaction and needs of the individual landowners to better the programme.

Recommendations:

6.1) Establish a private land conservation research relationship with appropriate academics that is designed to identify and target specific research

needs, inclusive of submitting joint funding applications, specifically for provincial and national programmes;

6.2) Hold an annual workshop with role player representatives to develop and refine an explicit research strategy for private land conservation;

6.3) Investigate the potential for CapeNature to secure funding for publications from government;

6.4) Lobby government for additional funds to support research linked to capacity development for various aspects of all private land conservation work (e.g., extension, legal capacity)

4.1.7 Refine the optimal instrument mix to match existing needs.

Description of Key Barrier:

A prerequisite for the BSP (indeed any effective stewardship programme) is the design, implementation and ongoing refinement of an optimal mix of mechanisms (OMM). The complex, dynamic and diverse character of the context in which the BSP operates requires multiple needs be met. For example, landholders present a range of motivations and factors driving satisfaction that can be harnessed. The instruments, incentives and institutions comprising the OMM should therefore be consciously considered as a complementary set of mechanisms that together provide the 'levers' for determining the functioning of the programme. In this sense, the OMM should engage the social, economic and ecological dimensions of the provincial and, more broadly, national context.

Recommendations:

- 7.1) Fund and distribute signage for landholders promoting: i) their membership in the BSP, and ii) winners of provincial and national awards;
- 7.2) Establish a process, founded on strong communications with the Working for Water programme, that co-develops spatially explicit strategies at an appropriate administrative scale, for prioritising the clearing of invasive alien plants;
- 7.3) Establish a process that develops spatially-explicit strategies at an appropriate administrative scale for prioritising the allocation of fencing resources;
- 7.4) Conduct research aimed at providing predictions for the likelihood that increasing the three financial incentives offered by the BSP might negatively trigger a shift in landholders drivers of satisfaction from those that benefit nature to those delivering increased income;
- 7.5) Identify Extension Officers that are delivering sub-optimal service to landholders and counsel and train them within a larger training programme focused upon communication and negotiation skills;
- 7.6) Establish a learning and refinement strategy, founded upon explicitly strategic monitoring and evaluation, that is widely agreed by stakeholders and is founded upon the research presented in this thesis;
- 7.7) Promote and enhance the annual awards conference to provide landholders incentive to attend, encouraging them to subsequently act as advocates for the BSP;
- 7.8) Develop a proactive landholder recruitment process that includes interviewing landholders with the survey presented in this research to ensure

that landholders most likely to be satisfied in the programme are selected to join.

Table 12: The current and proposed optimal mix of mechanisms implemented by the Biodiversity Stewardship Programme that could be used to secure landholder commitment. Note that mechanisms can serve more than one purpose (¹). ² denote the class of mechanism as categorised in the review by Young et al. (1996). ³ denote a mechanism that has been intermittently implemented depending upon available funding. ⁴ denote mechanisms not implemented at the time of completing this research, but which have been discussed by CapeNature for possible implementation.

	Current (sub-optimal) mix of mechanisms	Proposed new mix of mechanisms or refinement	Proposed refinement(s)
1.	National legislation	National legislation	None – legislation is widely regarded as world-class and supportive of PPA initiatives such as the BSP
2.	Covenant	Covenant	Landowners should follow the legislation. Part of training opportunities and better land management on the properties.
4.	Support from an extension officer	Support from an extension officer	Currently CapeNature not operating with full extension capacity with certain regions in the Western Cape without any extension capacity. Role of NGO's important and other partners , but CapeNature need to assess focus areas and capacity needs for future to keep

			landowners positive and satisfaction rating in programme high.
5.	Auditing procedure	Auditing procedure	Auditing currently a one day event and CapNature should look at the auditing process as an information sharing opportunity. NGO's a possible partner to conduct audits where capacity constraints exist.
6.	Assistance with clearing invasive alien plants	Targeted assistance with clearing invasive alien plants	Clearing of invasive alien plants is currently not strategic and where so is conducted in an ad hoc fashion. Greater resources should be provided to strategically target the proactive removal of invasive alien plants. Landholders with high priority elements of nature whose satisfaction hinges heavily on invasive alien plant control and who want higher than current levels of interaction or attention from CapeNature should be prioritized.
7.	Funding for fencing sensitive areas	Strategic funding process for fencing sensitive areas	The allocation of funding for fencing sensitive areas is currently not strategic. A (national) process whereby landholders can apply for funding should be established. Greater funding for fencing materials should be provided. Landholders with high priority elements of nature whose

			satisfaction hinges heavily on maintaining valued nature and who want higher than current levels of interaction or attention from CapeNature should be prioritized.
8.	Tax deduction	Tax deduction	Tax deductions are currently regarded by many landholders as inadequate. Careful increases could improve landholder commitment, but run the risk of damaging landholders voluntary commitment as an expectation of financial recompense could ensue.
9.	Rates rebate	Rates rebate	Rates rebates are currently regarded by many landholders as inadequate. Careful increases could improve landholder commitment, but run the risk of damaging landholders voluntary commitment as an expectation of financial recompense could ensue.
11.	Sign for landholder's front gate ⁴	Sign for landholder's front gate ⁴	Signs are not commonly distributed, but could be. Note that some landholders prefer to remain anonymous.
12.	Annual awards conference ^{3,4}	Annual awards conference ^{3,4}	Important to continue this practice in the stewardship regions with landowners giving them recognition on a specific platform for their conservation contribution.

13.	Learning Groups	Learning groups	Currently do not formally exist, and anecdotal evidence suggests they are rare. Would require a substantial long-term investment by CapeNature, but could be seeded using carefully selected landholders. Distances between covenanted properties may prohibit effective implementation.
14.	Social media networks	Social media networks	Internet access is (increasingly) common amongst landholders. Turnover of ownership is also increasing, bringing-in younger landholder who is more familiar and comfortable with social media. Could be used as a way of countering the large distances between landholders to promote communication, knowledge sharing and learning.

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APPENDIX 1: – LOGIC TABLE DEVELOPED DURING FOCUS GROUP ONE
SUPPORTING THE CAPENATURE BIODIVERSITY STEWARDSHIP PROGRAMME
LANDHOLDER LOGIC MODEL

Focus Group 1: Stewardship Landowners

Resources, activities, outputs, and short, mid and long term outcomes:

Questions: Focus Group 1

1. Introduction of focus group.
2. Why involved in stewardship
3. Your perception. How does CN extension staff rate / perform
4. Performance of staff – extension staff
5. Take us through process from deciding to join stewardship to signing of agreement.
6. What works in programme and does not.
7. What are the biggest challenges & suggestions to improve
8. Role of CN extension officer?
9. Role of landowner in a stewardship model?
10. Should the current CN Stewardship model change
11. Anything else – General comments

RESOURCES:

- Conservation Background
- Land
- Management Plan
- APO
- Cape Mountain Zebra Habitat
- Communication
- Technical Assistance: Mapping, legal, documentation, toolbox
- Legal Advice
- Farmers Unions
- GI
- Chamber of commerce
- Management
- Incentives
- Media

ACTIVITIES:

General activities:

- Personal contact
- Timeframes
- Knowledge exchange
- Media
- advocacy

Extension activities:

- Brought concept
- Legislative
- Facilitator
- Extension Links
- Monitory
- Project Management
- Info
- Advice

Landowner Activities:

- Implement Management Plan
- Communicate
- Develop & Educate
- Understanding Ecological Process
- Info sharing
- Part of process & interested
- ID needs & Communicate
- Responsibility towards neighbors etc. e.g. conservancy

OUTPUTS:

- Land Conservation
- Developments – Social Benefits
- Land Management
- Increase value of land
- Protects property
- Corridor vision
- Research
- GI initiative – Bigger conservation initiatives
- Environmental Education
- Teamwork

- Increase habitat e.g. Cape Mountain Zebra
- Technical assistance
- Active management of land
- Relationships
- Tourism
- Projects (job creation)

OUTCOMES:

Short-term (5 years)

Direct intensive engagement with BSP extension staff

Rapid completion of contractual arrangements

Securing benefits (e.g., tax deduction, rates rebate, rebate on land sales tax)

Management assistance for biodiversity (e.g., fire planning, erosion control)

Management assistance: clearing invasive alien plants

Management information on biodiversity (e.g., species lists and localities)

Management information for business planning (e.g., EIA, legislation for extra-limital species)

Support for completing management plan

Mid-term (20 years)

Regular continuous contact with BSP extension staff

Strong communications with CapeNature (e.g., website, newsletter)

Capacitated for effective land management

Regular auditing to check biodiversity is improving

Advocates for the BSP

Legally compliant with legislation and regulations

Business planning for ecotourism

Long-term (in perpetuity)

Protecting biodiversity for future generations

Securing ecosystem services provided by soil and water

Ecotourism generating funding for land management (very few landholders)

Protecting land from re-distribution to formerly disadvantaged communities (very few landholders)

Recognition
(e.g., signage, awards)

APPENDIX 2: – LOGIC TABLE DEVELOPED DURING FOCUS GROUP TWO

SUPPORTING THE CAPENATURE SENIOR MANAGEMENT STAFF LOGIC MODEL

Focus Group 2: Senior Managers - CapeNature

Resources, activities, outputs, and short, mid and long term outcomes:

Questions: Focus Group 2

1. Introduction of focus group.
2. Why involved in stewardship
3. Your perception. How does CN extension staff rate / perform
4. Performance of staff – extension staff
5. Take us through process from deciding to join stewardship to signing of agreement.
6. What works in programme and does not.
7. What are the biggest challenges & suggestions to improve
8. Role of CN extension officer?
9. Role of landowner in a stewardship model?
10. Should the current CN Stewardship model change
11. Anything else – General comments

RESOURCES:

- Staff
- Program Managers
- Law Administration Department
- Mentorship Programme
- Collective Memory
- Trained Staff
- Other Institutions
- Reserve Managers
- Science: Example Maps etc.
- Nelson Mandela University of Technology (Tertiary institutions) – Extension courses

ACTIVITIES:

General activities

- Coaching
- Mentorship
- Facilitate
- Off Reserve
- Negotiations
- Extension

Stewardship activities:

- Fine scale planning
- Extension
- Stewardship Engagement
- Maintenance & Audits

Extension activities:

- Advocacy (Broadly) & CapeNature
- Negotiation
- Professional advice & Facilitate
- Auditing
- Maintenance & Stewardship
- Planning
- Project Management
- Collect survey info
- Facilitate incentives
- Updating of Management Plans
- Capacity building – landowners
- Plan – Annual Plan of Operations Planning
- Legal Advice

Landowner activities:

- Management Authority
- Capacity Building
- Technical Advice & Data
- ID Gaps & Opportunities
- Conservation Agent

OUTPUTS:

- Local development & Awareness
- Good land management – Landowner model
- Corridor programme - tool
- Highly skilled extension

- Mentorship for landowners
- Relationships
- Volunteers
- Targets reached
- Protected area expansion
- Social impact
- Best Practice
- Reactive & Proactive stewardship
- Planning
- Extension course
- Projects
- Technical advice & data
- Holistic approach
- External partnerships

APPENDIX 3: – LOGIC TABLE DEVELOPED DURING FOCUS GROUP THREE

SUPPORTING THE CAPENATURE BIODIVERSITY STEWARDSHIP PROGRAMME

EXTENSION STAFF LOGIC MODEL

Focus Group 3: Extension Staff – CapeNature

Resources, activities, outputs, and short, mid and long term outcomes:

Questions: Focus Group 3

1. Introduction of focus group.
2. Why involved in stewardship
3. Your perception. How does CN extension staff rate / perform
4. Performance of staff – extension staff
5. Take us through process from deciding to join stewardship to signing of agreement.
6. What works in programme and does not.
7. What are the biggest challenges & suggestions to improve
8. Role of CN extension officer?
9. Role of landowner in a stewardship model?
10. Should the current CN Stewardship model change
11. Anything else – General comments

RESOURCES:

- Staff
- Program Managers
- Law Administration Department
- Mentorship Programme
- Collective Memory
- Trained Staff
- Other Institutions
- Science: Example Maps etc.
- NNMU (Tertiary institutions) – Extension courses

ACTIVITIES:

General activities:

- Negotiating
- Legal capacity
- Facilitate stewardship process (legal,admin,management)
- Off Reserve
- Relationship building / trust
- Extension
- Landowner visits
- Site assessments (ecological & management needs)

Extension activities:

- Advocacy (Broadly) & CN
- Negotiation
- Professional advice & Facilitate
- Auditing
- Maintenance & Stewardship
- Planning
- Project Management
- Collect survey info
- Facilitate incentives
- Updating of Management Plans
- Capacity building – landowners
- Plan – APO Planning
- Legal Advice

Landowner activities:

- Management Authority
- Reserve manager
- Implement APO
- Most important aspect of Stewardship - willing landowner
- Capacity Building (training of staff, neighbouring landowners)
- Build relationship with extension
- Technical Advice & Data
- ID Gaps & Opportunities in APO
- Conservation Agent

Stewardship activities:

- Fine scale planning
- Extension
- Stewardship Engagement
- Maintenance & Audits

OUTPUTS:

- Critical Biodiversity conservation
- Good land management – Landowner model
- Corridor programme – tool
- Protected Area Expansion
- Highly skilled extension
- Mentorship for landowners
- Relationships / Trust with private landowners
- Conservation Targets reached
- Social impact (job creation , Environment education)
- Best Practice
- Reactive & Proactive stewardship sites
- Planning (regular protected area expansion planning)
- Extension course
- Projects (management)
- Technical advice & data
- External partnerships

Appendix 4: Key events in the history of the CapeNature Stewardship Programme.

	Stewardship Event	Type of event	Start date	No. of years
1	Current CSP programme manager resigns	Critical	2015	1
2	Return to SA - Joins WWF - SA Stewardship Programme - BBBB Project	Personal	2014	1
3	Dennis research starts	Research	2013	2
4	Leave for New Zealand	Personal	2013	1
5	Cederberg Corridor programme funding for extension ends	Critical	2012	4
6	Personal Research starts	Research	2012	3
7	Matthew Selinske research starts	Research	2012	2
8	Joins Gouritz Corridor & BSP	Personal	2011	2
9	Leave Stewardship programme CapeNature - Reserve Manager CapeNature	Personal	2010	2
10	Start working for Cape Nature - Cederberg Corridor	Personal	2009	1
11	New CapeNature Conservation Services / Stewardship forum	Stewardship	2009	8
12	Landcare identified as partner - MOU	Stewardship	2009	8
13	Stewardship operationalised in CapeNature	Stewardship	2009	8

14	Vocational farm workers training - Stewardship incentive	Stewardship	2009	2
15	Stewardship mentor appointed for extension staff	Stewardship	2009	2
16	1st Business case for stewardship	Stewardship	2009	1
17	Reactive stewardship sites starting to increase	Critical	2009	8
18	Landcare & Stewardship collaboration	Stewardship	2009	8
19	BIONET implementation City of Cape Town	Stewardship	2009	8
20	1st Stewardship Gala dinner for stewardship landowners	Stewardship	2009	8
21	Joins reference group officially	Personal	2009	8
22	Issue of costing of stewardship sites a concern	Critical	2009	8
23	Need for separate stewardship budget in programme	Stewardship	2009	1
24	Protected areas expansion targets exceeds extension capacity	Critical	2009	2
25	Cape Priority map taking in consideration climate change	Stewardship	2009	5
26	Tax relief for stewardship sites passed by National Treasury	Stewardship	2009	8
27	DEAT takes on Stewardship nationally	Stewardship	2009	8

28	Timeframe challenges in getting stewardship contracts finalised	Stewardship	2009	6
29	Cederberg Corridor Programme starts with strong stewardship component - external funds	Stewardship	2008	5
30	Cape Capacity Building stewardship extension course	Stewardship	2008	2
31	Internal challenges in CapeNature from different departments like Human Resources, Finance Department.	Critical	2008	5
32	Stewardship implemented in West coast Biosphere reserve - Collaborative working group	Stewardship	2008	8
33	1st Conservation Stewardship Policy	Stewardship	2007	5
34	Landcare partnership AWP implementation	Stewardship	2007	2
35	CapeNature institutional challenges	Critical	2007	2
36	Stewardship Operational Manual	Stewardship	2007	10
37	Stewardship Database operational	Stewardship	2007	10
38	Stewardship part of CapeNature Business Unit goals	Stewardship	2007	10
39	1st Partnerships developed in CSP (Kwazulu Natal, DEAT)	Stewardship	2007	10
40	Staff capacity increase in CN including legal department	Stewardship	2007	2

41	High staff turnover in CN especially extension component for CSP	Critical	2007	2
42	Resistance from provincial government for funding	Critical	2007	2
43	Operational Stewardship manual developed	Stewardship	2007	10
44	GI 1st full time Stewardship conservation services manager	Stewardship	2007	10
45	Challenges in Gouritz Initiative integrating stewardship in business area	Critical	2007	1
46	Extension capacity biggest challenge	Stewardship	2007	2
47	Handover between extension to landowners key challenge and sensitive process	Stewardship	2007	2
48	First audits of contract nature reserves	Stewardship	2006	11
49	National Biodiversity Stewardship Programme advisory committee established	Stewardship	2006	10
50	Internal Challenges accepting Stewardship Programme	Critical	2005	10
51	New Stewardship Programme Manager Appointed	Stewardship	2005	10
52	Internalizing Stewardship Process	Stewardship	2005	2
53	Adopted as strategic priority activity Cape Action for People and the Environment	Stewardship	2004	5

54	Finalising first Legal contractual Agreements for landowners	Stewardship	2004	2
55	Adoption of CAPE biodiversity conservation targets	Stewardship	2004	1
56	CapeNature project completion - Biodiversity Economy & conservation stewardship – CAPE	Stewardship	2004	5
57	Mapping of Conservation Stewardship Programme priorities	Stewardship	2003	2
58	Conservation Stewardship Programme Vision development	Stewardship	2003	6
59	Development of Conservation Stewardship Programme brand	Stewardship	2003	1
60	Launch & Implementation Phase of CSP	Stewardship	2003	12
61	No legal framework for stewardship	Critical	2003	1
62	4 staff started stewardship programme	Critical	2003	3
63	Development Phase	Stewardship	2002	2
64	CapeNature & Botscoc stewardship pilot phase (3 sites)	Stewardship	2002	2
65	CAPE Pathfinder stewardship report	Stewardship	2001	8
66	CapeNature adopt bioregional approach - opened the way for stewardship in organisation	Stewardship	1999	2

67	CapeNature organisational memory and culture - Protected area culture - stumbling block for CSP	Critical	1999	18
68	Conservancies	Stewardship	1990	25

Appendix 5: People involved in the CapeNature Biodiversity Stewardship

Programme Status denotes involvement in the BSP at the time of completion of the focus groups

	Person	Organisation & Position relating to Stewardship in Organisation.	Current Status In Organisation
1	Christina Geldenhuys	CapeNature Stewardship & Conservation Services	Left CapeNature
2	Steve Gildenhuys	CapeNature Stewardship & Conservation Services	Current Position
3	Hermien Fourie	CapeNature Stewardship & Conservation Services	Left CapeNature
4	Arnelle van Noie	CapeNature Stewardship	Current Position
5	Garth Mortimer	CapeNature Stewardship	Current Position
6	Donny Malherbe	CapeNature Stewardship & Conservation Services	Current Position
7	Vicki Hudson	CapeNature Stewardship	Left CapeNature
8	Barend le Roux	CapeNature Conservation Services	Current Position
9	Teboho Maliehe	CapeNature Conservation Services	Left CapeNature
10	Anita Wheeler	CapeNature Stewardship	Current Position
11	Andre Mitchell	CapeNature Legal	Current Position
12	Brilaine Manasse	CapeNature Stewardship	left
13	Corne Claassen	CapeNature Stewardship & Conservation Services	Current Position
14	Allistair	CapeNature Stewardship & Conservation Services	Current Position

	Person	Organisation & Position relating to Stewardship in Organisation.	Current Status In Organisation
	Pieterse		
15	Graham Lewis	CapeNature	left
16	Chris Martens	CapeNature Stewardship	Left
17	Rika du Plessis	CapeNature Stewardship & Reserve Manager	Current Position
18	Johan Burger	CapeNature - Greater Cedarberg CapeNature Stewardship & Conservation Services	Current Position
19	Jan Coetzee	CapeNature - Greater Cedarberg Biodiversity Corridor Stewardship	Left CapeNature
20	Adrie Steinberg	CapeNature - Greater Cedarberg Biodiversity Corridor Stewardship	Left CapeNature
21	Kerry Purnell	CapeNature & Cape Action Plan for People and the Environment Stewardship	Left CapeNature
22	Odette Curtis	CapeNature & Table Mountain Fund Stewardship	Left CapeNature
23	Jenfer Gouza	CapeNature - Greater Cedarberg Biodiversity Corridor Stewardship	Left CapeNature
24	Tertius Carinus	Agulhas Biodiversity Initiative - South African National Parks	Current Position
25	Kirsten Fourie	Botanical Society	Unknown
26	Tracey Cumming	Botanical Society	Unknown
27	Rhett Smart	Cape West Coast Biosphere Reserve	Left CapeNature
28	Leandi Wessels	CapeNature – Kogelberg Biosphere	In Service
29	Malinda Gardiner	Conservation International	Unknown
30	Mandy Schuman	DTEC - Northern Cape	In Service
31	Johan Jonk	DTEC - Northern Cape	In Service

	Person	Organisation & Position relating to Stewardship in Organisation.	Current Status In Organisation
32	Pam Booth	Eden To Addo Initiative and the Garden Route Initiative	Still
33	Claire Taylor	Endangered Wildlife Trust and Biodiversity Stewardship South Africa	Unknown
34	Vicky Ahlmann	Endangered Wildlife Trust	Left Endangered Wildlife Trust
35	Derrek Ruiters	Kwa Zulu Natal Ezemvelo Wildlife	Unknown
36	Kevin McCann	Kwa Zulu Natal Ezemvelo Wildlife	Left Kwa Zulu Natal Ezemvelo Wildlife
37	Lungile Ntuli	Kwa Zulu Natal Ezemvelo Wildlife	Unknown
38	Bheka Memela	Kwa Zulu Natal Ezemvelo Wildlife	Unknown
39	Arhurengari Malange	LEDET - Limpopo Province	Unknown
40	Nomcebo Malatjie	LEDET - Limpopo Province	Unknown
41	Louis Smith	Marais, Muller and Yesiko Attorneys	Still in service
42	Sue Swain	SANParks - Garden Route Initiative	Unknown
43	Carli Venter	South African National Parks	Unknown
44	Mark van Niekerk	South African National Parks - Garden Route Initiative	Unknown
45	Nneheleng Koali	South African National Parks - Garden Route Initiative	Unknown
46	Brian Morris	WWF – SA	Unknown

APPENDIX 6: – QUESTIONNAIRE IN ENGLISH

DETERMINING THE SATISFACTION OF STEWARDSHIP LANDOWNERS
TOWARDS THE CAPENATURE STEWARDSHIP PROGRAMME, THEIR
MOTIVATIONS & EXPECTATIONS TOWARDS THE PROGRAMME &
IMPORTANCE OF EXTENSION.

IDENTITY CODE: _____

DATE: _____

INTERVIEWER: _____

Introduction and purpose:

Hello, my name is JAN COETZEE and I am part of the stewardship extension team conducting and evaluating the Stewardship Programme as delivered through CapeNature. I'd like to ask you a few questions about your experience with the program. It will take - minutes, depending on how much you have to say. Stakeholder involvement in the research is very important and so returning the results to stakeholders involved in the research is of great importance. This will be done through the already existing platforms in the Gouritz Corridor. Some of the most important ones are the BIOPLUS (Steering Committee formed by partners to drive specific projects in the corridor programme) and also through briefings to the directorate of the Biosphere Reserve who were elected recently. To reach the majority of the stakeholders other important platforms like the Fynbos Forum and also NGO meetings in the region will also be engaged.

The research project guarantees confidentiality in all the methods and no participant's individual responses will be made public. In the case of the

questionnaire, confidentiality will be guaranteed by giving the landowners codes and removing the individual's identity. Only the researcher and his immediate supervisors will have access to the raw data identifying participants. The participants have the right of withdrawal at any stage or for a specific question.

Section A – Background Information

A1.) Corridor: 1. Greater Cederberg Corridor 2. Gouritz Corridor

A2.) Name of Stewardship Site and area:

A3.) Interviewee code:

A4.) Role: 1. Landowner 2. Property Manager 3. Trustee

Other _____

A5.) Type of Stewardship Site:

- 1. Contract Nature Reserve
- 2. Biodiversity Agreement

A6.) What is the size of the whole property? (Ha):

- 1. 1 – 500 ha
- 2. 501 – 1000 ha
- 3. 1001 – 5000 ha
- 4. 5001 – 10 000 ha
- 5. 10 001 – 50 000 ha
- 6. 50 001 – 100 000 ha

A7.) How many hectares in stewardship?

1. 1 – 500 ha
2. 501 – 1000 ha
3. 1001 – 5000 ha
4. 5001 – 10 000 ha
5. 10 001 – 50 000 ha
6. 50 001 – 100 000 ha

A8.) What are the 3 primary land uses on the stewardship site (i.e. %)? Please rank land use importance related to business and land area.

1. Dairy
2. Grazing (Beef and/or sheep)
3. Orchards
4. Vegetables
5. Vineyards
6. Residential
7. Natural veld
8. Recreational

Other _____

A9.) Are there any ecotourism facilities on the property (e.g. Bed & Breakfast, chalets, hunting, hiking routes)?

1. Yes

2. No

3. Unsure

A10.) (IF YES) could you describe the type and number of the ecotourism operations on stewardship property?

MANAGER / OWNER

A11.) Do you live on the property permanently (i.e. for the majority of week days)?

1. Yes

2. No

3. Unsure

A12.) How long have you managed/owned this particular property?

1. < 1 years

2. 1 – 5

3. 6 – 10

4. 11 – 20

5. > 20

A13.) How long has the property been in the owners'/your family?

1. < 1 years

2. 1 – 5

3. 6 – 10
4. 11 – 20
5. > 20
6. Unsure

A14.) Does the owner / you have any intention of selling the property in the next 5 years?

1. Yes
2. No
3. Unsure

A15.) To what degree do you as manager have authority over long term decision – making for the property?

1. Complete authority
2. Partial authority, decisions must be made in consultation with owner
3. No authority

Other

A16.) How many years of farming experience do you have?

1. None
2. < 1
3. 1 -5
4. 6 – 10

5. 11 – 15

6. 16 - 20

7. > 20

8. Not applicable. Reason

A17.) How long have you been farming on particular farm?

1. None

2. < 1

3. 1 -5

4. 6 – 10

5. 11 – 15

6. 16 - 20

7. > 20

8. Not applicable. Reason

(OPTIONAL QUESTIONS)

A18.) Are you a member of any environmental or conservation group or organization?

1. Yes

2. No

If Yes please name the group/organisation

A19.) Please indicate if your upbringing was rural or urban.

1. Rural
2. Urban
3. Unknown

A20.) How would you say your environmental attitude are on a scale of 1 to 5?

Poor 1 2 3 4 5 Excellent

SECTIONS B – MOTIVATIONS & EXPECTATIONS OF STEWARDSHIP
PROGRAMME

B1.) How, or from where, did you first hear about the stewardship programme?

B2.) Why are you involved in the CapeNature stewardship programme? Can you please rank these reasons from most important to least important?

B3.) How do you see your role in the stewardship programme?

B4.) Please indicate your level of agreement or disagreement with the following four statements.

	Strongly disagree	Disagree	Neutral/ Unsure	Agree	Strongly agree
a.To make incentives (from e.g. financial, capacity etc.) available is a good method to promote conservation on private land.					
b.Conservation of fauna and flora must be the responsibility of private landowners.					
c.CapeNature or other government conservation agents must be					

responsible for the costs for managing biodiversity on the stewardship site.					
d.I will continue with the stewardship programme if more incentives are produced.					

B5.) Incentives

Which of the following incentives will motivate you to continue with the stewardship programme	Not Interested	Slightly interested	Uncertain	Interested	Really interested
a.Tax deductions on conservation land and management activities.					
b.Assistance with					

fence and soil management.					
c.Funding for conservation work e.g. alien clearing & erosion control.					
d.Research assistance and access to research material.					
E.Public/Community recognition and support.					
f.Free entry to all CapeNature reserves.					
g.Eco tourism assistance and marketing assistance.					
h.Law enforcement assistance.					
i.Assistance with conservation management plans					

and maps.					
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Other Specify Please:

SECTION C – SATISFACTION WITH STEWARDSHIP PROGRAMME

C1.) Do you feel you understand the given responsibilities & goals for you to be in the stewardship programme?

- 1) Yes
- 2) No
- 3) Unsure

C2.) Do you feel the CapeNature stewardship programme is a well-run, organised programme.

- 1) Yes
- 2) No
- 3) Unsure

C3.) Do you feel that your understanding of the stewardship programme is the same as that of CapeNature.

- 1) Yes

2) No

3) Unsure

C4.) Do you feel the Stewardship Programme needs to improve and how?

1) Yes

2) No

3) Unsure

How:

C5.)I strive to meet the challenges, such as completing my management APO set by the stewardship programme yearly.

1) Yes

2) No

3) Unsure

C6.) Please indicate your level of satisfaction with the following:

	Very Negative	Negative	Neutral/ Uncertain	Positive	Very Positive
a.Your experience with the stewardship programme					
b. Recognition for my work in the stewardship programme.					
c. My role and responsibilities for the stewardship					

programme meet my motives for joining the programme.					
d. Your overall experience in the stewardship programme.					
e. Through my involvement with the stewardship programme I am able to actively contribute to the conservation of threatened ecosystems.					
f. My conservation management skills have improved since joining the stewardship programme.					
g. The supervision and extension provided by the stewardship programme					
h. The stewardship programme's communication methods.					
i. I feel frustrated by the stewardship programme.					

j. My contribution towards the stewardship programme					
k. My management of the stewardship property is effective.					

SECTION D – IMPORTANCE OF EXTENSION

D1.) What do you see should the role of a CapeNature extension officer be? Can you please rank these roles?

	Very Poor	Poor	Neutral/Uncertain	Good	Very Good
D2.) How does CapeNature extension staff rate regarding communication of stewardship information?					

D2a.) How does CapeNature extension staff rate regarding time management?					
D2b.) How does CapeNature extension staff rate regarding project management?					
D2c.) How does CapeNature extension staff rate regarding delivery of service?					

D3.) How does CapeNature extension staff perform?					
--	--	--	--	--	--

D4.) Have You:

- a) Received reports, publications, or information through the extension personal regarding the stewardship programme?

Y/N

- b) Attended a workshop, educational or participatory event organised by the extension personal of CapeNature in the stewardship programme?

Y/N

- c) Used the CapeNature website to look at extension information related to the stewardship programme?

Y/N

D5.) On a scale of 1 to 10, where 10 is absolute confidence and 1 is no confidence, how much confidence do you have in the extension capabilities of the stewardship programmes extension staff regarding managing stewardship sites?

Rating: _____

D5a.) On a scale of 1 to 10, where 10 is absolute confidence and 1 is no confidence, how much confidence do you have in the extension capabilities of the stewardship programmes extension staff regarding stewardship audits?

Rating: _____

D5b.) On a scale of 1 to 10, where 10 is absolute confidence and 1 is no confidence, how much confidence do you have in the extension capabilities of the stewardship programmes extension staff regarding providing the correct & latest information?

Rating: _____

D5c.) On a scale of 1 to 10, where 10 is absolute confidence and 1 is no confidence, how much confidence do you have in the extension capabilities of the stewardship programmes extension staff regarding providing their stewardship knowledge?

Rating: _____

D6.) Is extension increasing your awareness of information related to the stewardship programme?

D6a.) Specify type of information: e.g. research material, experiential and management material.

D6b.) Can you provide an example (probe and follow up)?

D7.) What is your opinion about the extension information products supplied through the extension personnel?

- 1) Highly Useful
- 2) Useful
- 3) Neutral/Uncertain
- 4) Least Useful

5) Not Useful

D8.) Did you use or apply any of this extension information on your stewardship site during the past year? Please indicate if yes type of information material used.

Y/N _____

Frequency?Examples?

D9.) For this final set of questions please answer YES or NO [IF YES, ask respondent to rate the “increase” on a scale of 1-5, 1= minimal and 5 = substantial]

In your opinion, have extension activities:

	YES 1 -5	NO = 0	DON'T KNOW
A) Increased awareness of current knowledge related to sustainable conservation management			
B) Increased use of current scientific knowledge on the stewardship site			
C) Promoted ecosystem management principles on the stewardship site			

D) Improved methods for managing stewardship site			
E) Increased trust in information products relevant to the stewardship programme			

D10.) Do you have any further comments regarding the extension service in
CapeNature's stewardship programme?

SECTION E: DEMOGRAPHICS

E1.) Gender of subject:

1. Man
2. Woman
3. No comment

E2.) Into which age category do you fall?

1. 18 – 24 years
2. 25 – 32
3. 33 – 40
4. 41 – 48

2. Matric
3. First University degree
4. Second University degree (Honours)
5. Postgraduate qualification (Master / Doctorate)
6. Diploma
7. Postgraduate Diploma
8. Other

Conclusion:

Thank you for your time and for giving us your opinions – they are most helpful.

APPENDIX 7: – CAPENATURE BIODIVERSITY STEWARDSHIP BROCHURE (ENGLISH)



Frequently asked questions

- Q: Is a conservation area applicable to an individual property, a collectively managed/multi-landowner area (e.g. conservancy), or both?

A: Both. It can apply to a single property or a group of properties, like a conservancy
- Q: What do basic extension services include?

A: General advice, support and assistance, as well as input into the drafting of management plans.
- Q: Who will bear the legal costs for drawing up a biodiversity agreement?

A: CapeNature will carry all costs.
- Q: What will the consequences be if I choose to terminate the biodiversity agreement?

A: You will be liable for the total cost of CapeNature's management interventions up to the date of termination.
- Q: Will I have to remove existing infrastructure from the area that becomes the contract nature reserve?

A: No, all existing infrastructure may remain.
- Q: Will CapeNature have unlimited access to my property if it becomes a contract nature reserve?

A: No, but terms and conditions regarding access can be negotiated within the agreement.
- Q: Are there Tax benefits applicable when you become a nature reserve?

A: Yes, you are eligible for tax allowances.
- Q: If I sell my nature reserve, will the restrictions stipulated in the contract apply to the owner?

A: Yes, the same restrictions will apply.
- Q: Can I be assured that CapeNature can support the terms of the contract agreement in the future?

A: Yes, CapeNature as party to the contract is legally obliged to honour the agreement.
- Q: Will the general public have unlimited access to my property?

A: No, you as the landowner determine the specific rules and access by the general public that you require.
- Q: Can I graze domestic stock in a protected area?

A: Yes you may, as long as the stocking rate is determined for conservation purposes (as opposed to commercial stocking rates), using grazing as a management tool.

FOR MORE INFORMATION CONTACT YOUR
LOCAL CAPENATURE OFFICE:

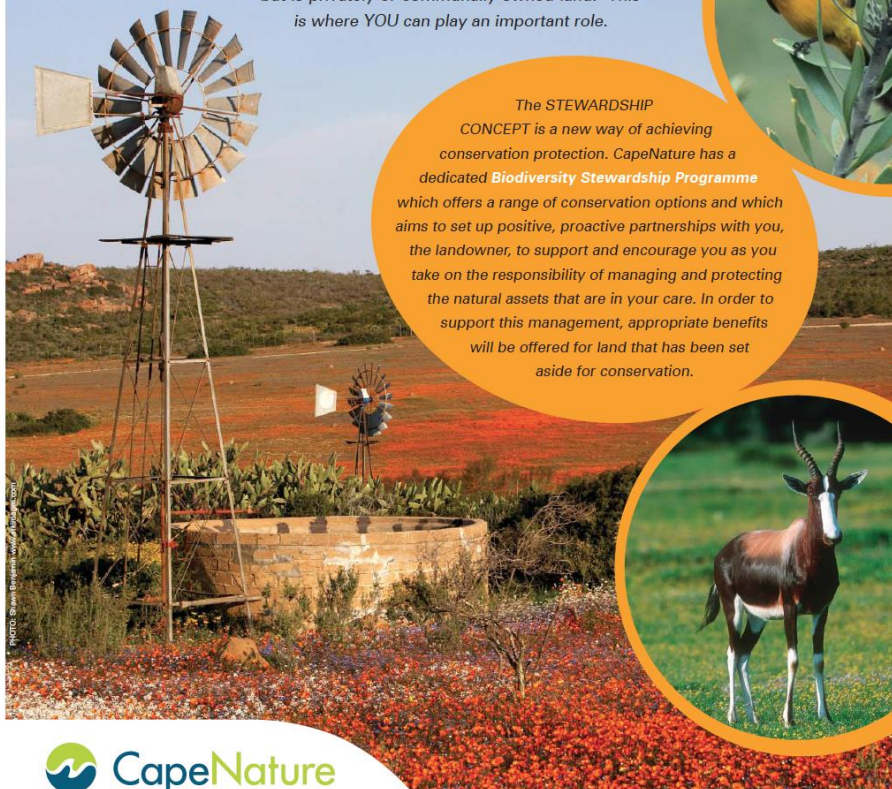
CONSERVATION IN LANDOWNERS' HANDS

How can you make a contribution to conservation?

LANDOWNERS CAN PLAY AN IMPORTANT ROLE IN THE
CONSERVATION OF OUR NATURAL HERITAGE.

At present the rich biological diversity of the Western Cape is not being sufficiently protected and is therefore under threat. This is partly due to lack of resources, but also because 80% of the land that has important biodiversity on it does not lie within formally protected areas, but is privately or communally owned land. This is where YOU can play an important role.

The STEWARDSHIP
CONCEPT is a new way of achieving
conservation protection. CapeNature has a
dedicated **Biodiversity Stewardship Programme**
which offers a range of conservation options and which
aims to set up positive, proactive partnerships with you,
the landowner, to support and encourage you as you
take on the responsibility of managing and protecting
the natural assets that are in your care. In order to
support this management, appropriate benefits
will be offered for land that has been set
aside for conservation.

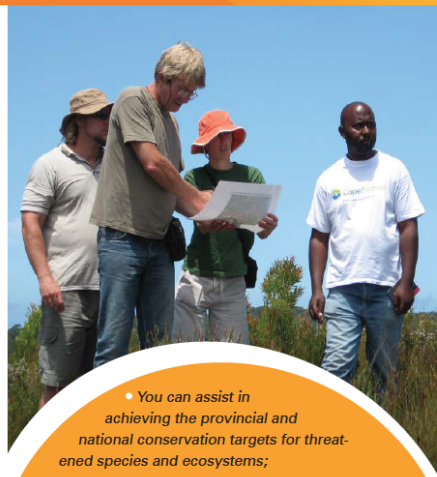


What are the stewardship options available to you?

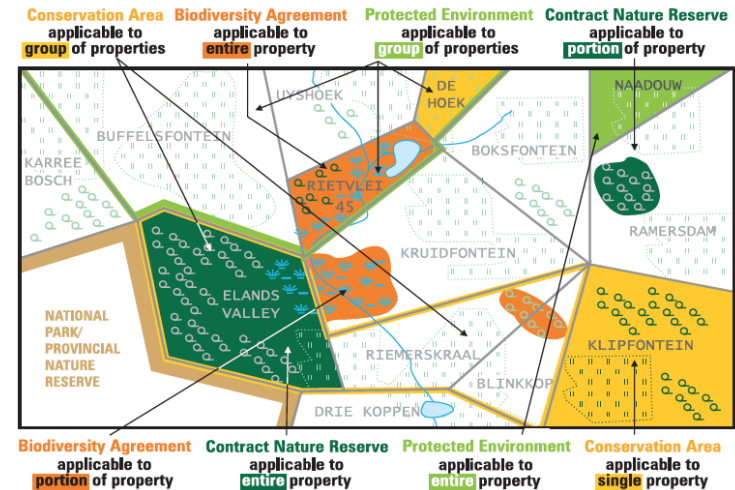
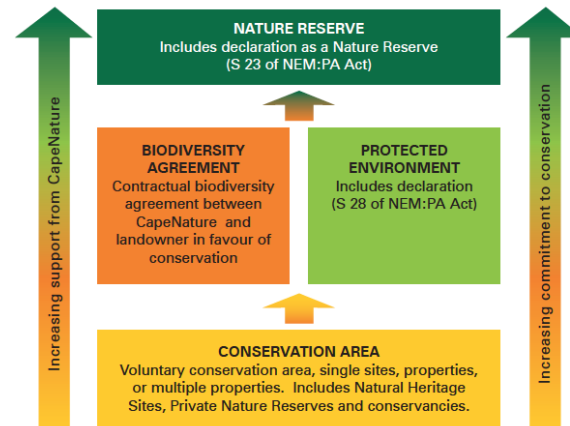
The four options available to landowners are Conservation Areas, Biodiversity Agreements, Protected Environments and Nature Reserves.

- All options are voluntary.
- Each one will be tailored to your needs as a landowner.
- The higher categories offer more incentives (benefits) and support by CapeNature, but have more restrictions and require greater commitment from landowners. It is important to note that you as the landowner retain title to the property at all times.

Why should YOU become involved?



- You can assist in achieving the provincial and national conservation targets for threatened species and ecosystems;
- Better management of natural resources will contribute towards securing the future for society, through improved water quality and production in catchments, and reduced erosion and flooding;
- By becoming involved in conservation on your land, you will have access to support and advice from dedicated CapeNature staff;
- Your income-base can be diversified through ecotourism and conservation associated opportunities.



OPTIONS

OPTION	LEVEL 1 CONSERVATION AREA	LEVEL 2 BIODIVERSITY AGREEMENTS	LEVEL 2 PROTECTED ENVIRONMENT	LEVEL 3 NATURE RESERVES
Which option applies to your land?	- Any natural land is suitable. - If rare or endangered habitats, rather progress to higher level of conservation security. - Can use this as a stepping stone to more security later on in process.	- Suitable for any conservation-worthy land. - Focuses on improving the management of specific biodiversity features or elements	- Useful to pursue where large landscapes require some form of conservation management, but where it is unnecessary or unsuitable to restrict other forms of extractive land use. - Multiple properties, buffers to statutory Protected Areas.	- Priority areas adjacent to statutory reserves or sufficiently large to be self-contained ecosystems. - Containing critically important species, habitats and self-contained sites.
Legal status/duration	- Flexible option with no defined period of commitment. - Registration document with the conservation agency.	- Has legal status by virtue of a legal contract between the landowner and the conservation agency. - Minimum period of 10 years suggested but may be longer or in perpetuity.	- Legal declaration under the Protected Area Act. - The duration for Protected Environments declared for other purposes is not prescribed.	Minimum of 30 years, but preferably in perpetuity.
Qualifying criteria?	Any landowner (s) willing to conserve the natural systems on their land.	Site must have been assessed to the standard of the provincial agency and found to contain biodiversity features identified as important or a priority for the province.	The landowner must be willing to submit to the declaration of the area as a Protected Environment, and to manage (or have managed) the site according to the norms and standards laid down for a Protected Area, but with fewer restrictions than a nature reserve.	- The site must contain significant biodiversity and/or process value to receive this status. - The landowner must consent to the declaration of the area as a nature reserve, and to manage (or have managed) the site according to the norms and standards laid down for nature reserves.
Possible land use limitations	Very few, but the area needs to maintain its natural character & there has to be an Alien Invasive Plant clearing plan in place.	Land must be managed in a way that will support natural processes.	There is no limitation on activities other than those specifically listed in the gazetting notice of the establishment of the Protected Environment.	- Land use rights must be consistent with the provisions of the Protected Areas Legislation. - Access and resident rights are unrestricted. - Owners retain title.
Benefits to the land-owners	- Advice and support through basic extension services. - Guidance with management plans and farm maps.	- Specific agreements for fire, alien species, plant and animal management. - Advanced extension services (e.g. alien clearing planning).	- Advanced extension services (e.g. alien clearing planning). - Regulate the use of the landscape through co-operation between various landowners.	- Substantial assistance with habitat management - Increased recognition and marketing exposure. - Conservation authorities will be able to lobby on your behalf for incentives.