



Republic of Namibia
Ministry of Environment & Tourism

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PRIVATE GAME PARKS & PRIVATE NATURE RESERVES
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PREAMBLE

The Ministry of Environment & Tourism commissioned this study into the ecological, social, and economic implications of private game parks and nature reserves in Namibia. The Ministry engaged the services of an independent team of researchers consisting of an ecologist, an economist and a lawyer.

The research team was faced with a lack of up to date data collection and monitoring of private game parks and nature reserves, and was surprised that a number of tourism establishment around the country which use the names game park or nature reserve are actually not registered with the Ministry in either category.

The study discusses the difference in the legislation between a private game park and a private nature reserve and recommends that in light of current standards in nature conservation, the legal and notional distinction between a park registered for wildlife conservation and one registered for plant conservation is no longer tenable, and that the focus in future should be on private conservation area relevant for both fauna and flora conservation. The reader will find that the ecological and economic discussions also treat the subject matter and evaluate the data from this point of view.

This report discusses the findings on all three aspects, provides a SWOT analysis and provides recommendations not only for implementation and policy and legislative level, but also for adequate monitoring in the Ministry and for mainstreaming private conservation areas into all of government's policy developments. Most importantly, the findings lead to the recommendation that private conservation areas should be fully integrated, legally, economically and ecologically with surrounding land and be managed as part of the larger system, so that the full biodiversity conservation potential can be realized.

At the time of writing this study *The Namibian* newspaper reported of the untimely death, the day before, of Mr Ben Beytell, who retired in 2011 as Director of Parks and Wildlife Management in the Ministry of Environment & Tourism:

The senior technical advisor for the Namibian Coast Conservation and Management project (Nacoma) Ignatius Kauvee, said a legend in conservation had passed on, and that Beytell had played a key role in the creation of parks and conservation legislation in the Country. "Here we are today in the Dorob Park; the last park given to Namibia by Ben Beytell. If it were not for him, there would be no Dorob"

The Namibian, 21 September 2012 p 6

We dedicate this study to the legacy of the late Mr Ben Beytell.

EXECUTIVE SUMMARY

The work is an exploration of the legal, biodiversity and economic aspects of the Private Game Reserves (PGRs) sector in Namibia. The **Legal** aspects looked at provisions contained within the Nature Conservation Ordinance 4 of 1975 in terms of PGRs and the implications thereof. The legal aspects also investigated the interaction of PGR and relevant government policies and programmes in terms of the efficient development or functioning of each. The **Biodiversity** work looked at the implications of PGRs on biodiversity conservation in Namibia as well as the appropriate policy developments needed to enhance their conservation role. Finally the **Economic** work analyzed the profitability of the sector as well as their impact on the tourism economy.

A. Approach

The work explored existing Ministry of Environment (MET) and Tourism data on PGRs and undertook analysis to capture emerging trends and current sector status. Stakeholder engagements in the form of interviews and meetings were also employed to gather additional data and industry insights. Desktop research was undertaken to review existing policies and regulations that might affect the PGR sector. A prototype cost-benefit model of a PGR was developed to understand the economics analysis better. The model developed essentially produced key economic values such as private net profit accruing to the PGR enterprise, the private internal rate of return over a ten year period (overall financial rate of return), and the net present value realised. The analysis also involved conversion of the transaction values to reflect their real opportunity costs in the national economy using shadow prices derived for the Namibian economy

B. Findings

The **Legal findings** are that the registration of PGRs does not bestow greater powers on private land owners to obstruct Government programmes, nor do they impose any additional restrictions on government which are not already applicable from the mere private land ownership of the areas in question. Government initiatives such as the Land Reform and Resettlement programmes are thus not threatened by the existence of PGRs.

The **Biodiversity findings** are that PGRs demonstrate immense ability to contribute biodiversity conservation. However due to the median sizes of 5,079 hectares (ha) of most PGRs are too small to contribute significantly to biodiversity conservation. In addition legal restrictions imposed on the management of wildlife, such as the need for a game fence and the requirement for hunting permits are the single biggest obstacle to conservation of biodiversity on privately held land, whether registered as a private nature reserve or not.

The **Economic findings** demonstrate that PGRs are profitable and economically viable. However from a risk perspective, they are highly depended on one sector-tourism (hunting and ecotourism). Such single sector concentration risk does not bode well for sustainability as it implies less diversification from a livelihood perspective. There are also no explicit economic incentives targeting PGR sector, and this could lead to its suboptimal development. The PGR model, based on its economic viability, can serve as an alternative resettlement model in Namibia, especially in marginal rangelands.

C. Recommendations

The study's findings thus proffers the following recommendations. These are classified into legal, biodiversity and economic recommendations.

The Legal Recommendations are as follows:

- Any new legislation in Conservation should provide for the possibility of one type of one type of private conservation area (rather than distinguishing between private game parks relating to wildlife and private nature reserve relating to plants as is in the current legislation).
- There should be a consideration for further devolvement of management powers to owners of conservation areas to allow for adaptive real time management.
- As PGRs are not a threat to any government programmes, they should be viewed as complementary to government conservation areas.
- PGRs should thus be viewed and promoted as complimentary land use models for greater integrated land use.

The Biodiversity Recommendations are as follows:

- MET devolves more rights over wild animals to farmers and conservancies so that they may gain from sustainable use of valuable animals, better manage the stocking rate and balance between different types of game animals, and better control conflict animals such as crop raiders and predators of livestock.
- MET explores the potential for reinstating important migrations for shared benefit of game and livestock farmers.
- In situations where migrations cannot be reinstated, MET encourages the movement of game animals within restricted rangelands to provide growing-season-long resting of grazed grasses, such as by rotational closing of water points and/or burning.
- MET discourages game fencing except for temporary housing of newly introduced game animals.
- MET disallows funnel trapping along perimeter game fencing.
- MET makes use of the records it gathers on private parks and reserves to aid decision making on adaptive management, together with other relevant monitoring data gathered by farmers, conservancies and citizen science websites.
- MET applies ecosystem viability analysis to guide decision making on parks and reserves.
- Veterinary restrictions be reviewed with a view to allowing re-introductions of buffaloes or mixing of game animals and cattle to provide bulk grazing services.
- MET allows cattle grazing in private parks and reserves to provide bulk grazing services, until such time that buffaloes may be re-introduced.
- MET lobbies internationally for removal of restrictions to trade in valuable game animals and their products.
- MET facilitates erosion control to maintain and restore key hydromorphic grasslands that contribute to habitat diversity and provide important buffering against droughts.

Finally the Economic Recommendations are as follows:

- Develop a comprehensive database on PGRs in Namibia as the current data is outdated and not centralised effectively.
- Develop a clear road map on PGRs that seeks to mainstream the subsector in all the tourism development policies and instruments.
- MET should seek to increase institutional capacity and financial support for institutions that oversees PGRs.
- MET must engage in further economic research to look at identifying additional factors influencing reserve size, exploring further the financial and economic profitability of private parks, and documenting non-market values.
- MET must seek to establish economic incentives for PGRs to ensure non-anaemic growth of the sector.
- PGRs must seek to raise the profile of their industry by establishing an association to ensure effective lobbying.
- MET must explore Public Private Collaborations in the sector to maximise potential conservation benefits.
- The MET should seek to mainstream the PGR model as an alternative land use option for Namibia, especially in land resettlement programmes in marginal rangelands.

INTRODUCTION

Background

Namibia is endowed with rich biodiversity. Essential to the conservation of this biodiversity is a network of protected areas that covers about 18% of the land area. Complementing the state-run protected areas is a network of communal conservancies and privately owned game farms. The communal conservancies cover 17% and private nature reserves and farms cover another 17% of the land area. The Government of the Republic of Namibia through the Ministry of Environment and Tourism (MET) recognizes the importance of communal land and private land owners in the conservation of biodiversity. Although the state-run protected areas cover nearly all biomes to some degrees, not all vegetation types are adequately protected. The protection of some of these vegetation types falls under communal and private protection.

The establishment of private game parks or nature reserves is supported under the Nature Conservation Ordinance, Ordinance 4 of 1975, as amended. Section 22 of the said ordinance allows the establishment of such private nature reserves by the Minister of Environment and Tourism through a government gazette upon application by the owner. The same ordinance allows the Minister of Environment and Tourism to withdraw any registration if the conditions for such registration are not being followed or adhered to. There are currently a number of private nature reserves in the country established under the Ordinance. There is currently lack of information on the implications of these private nature reserves on government initiatives such as land reform under the Ministry of Lands and Resettlement; conservation of biodiversity, economic contribution through tourism and food production as well as socio-economic impacts and benefits to especially the rural communities in whose areas many of the private reserves are located.

As the MET embarks upon the finalization of the Protected Areas and Wildlife Management Bill to replace the Nature Conservation Ordinance, there is a need to fully understand the implications of establishing private nature reserves in order to ensure a clear legislative and regulatory framework.

It is against this background that the MET engaged the services of an independent team of experienced consultants to undertake this study and to advise the Ministry on the ecological, social and economic implications of private game parks and private nature reserves in Namibia.

Objectives of this Study

The overall objective of this study is to assist the MET to understand the implications and impacts of the establishment of private game parks/nature reserves in Namibia.

As per the terms of reference this report includes, but is not limited to an analysis of the following areas:

- » Legal interpretation of section 22 and any related section of the Nature Conservation Ordinance, Ordinance 4 of 1975 and regulations thereof;
- » Any cross-sectoral policy conflicts such as the national land reform and any other government programmes in the country;
- » Implications on social aspects of communities and emerging farmers on adjacent land;
- » Local community benefits and empowerment
- » Implications on the biodiversity conservation (positive/negative) in the country and how this compliments state-run protected areas;
- » Implications on tourism development in the country;

- » Effect on tourism in state-run protected areas;
- » Implications on food security as a result of land initially used for farming being converted to wildlife management areas;
- » Contribution to Namibia's development plans and Vision 2030

It is our conviction, after having completed this study, that the improvement of land administration, including the integration of private conservation areas into all levels of planning and policy development, is the overall objective to which this study will hopefully contribute significantly. We therefore recommend that this study be shared by the MET with all the relevant partner ministries and organizations.

Methodology

The consultancy team for this study consists of an ecologist, an economist and a lawyer. After an initial inception meeting with the Namplace Project Manager, to discuss the terms of reference the team divided the work up the research work according to their fields of expertise.

All three experts conducted desktop literature reviews for this paper, and for the ecological findings, visits to various stakeholders in the private game park industry were interviewed during personal visits, or information was solicited with written questionnaires submitted by e-mail. Not all were answered, and therefore the data contained herein does not cover all the private conservation areas which exist in Namibia.

CHAPTER 1

LEGAL IMPLICATIONS OF PRIVATE GAME PARKS AND NATURE RESERVES, AND CROSS SECTORAL POLICY INTERACTION WITH OTHER GOVERNMENT PROGRAMMES

1. INTRODUCTION

This section provides a legal interpretation of section 22 of the Nature Conservation Ordinance 4 of 1975, which makes provision for the establishment of Private Game Parks and Private Nature Reserves. The interpretation is supported by also having regard to sections 23 and 24 of the Ordinance, which explain what the consequences are of the registration of such private conservation areas. This is unfortunately the closest we can come to a historical understanding of what the intention was in 1975, when this category of conservation areas was created, as during our research we did not find any secondary literature which discusses some of the thinking for various aspects of the Ordinance, back in 1975.

The discussion of sections 23 and 24 of the Ordinance lead naturally into an investigation whether there is a shift in jurisdiction over nature conservation responsibilities in the event of the registration of private conservation areas. Our finding is that currently this is not the case, which is supported by the findings of the procedures applied in permit office of the Ministry of Environment & Tourism.

The investigation then widens to establish whether the establishment of private conservation areas imposes more onerous obligations on the state to implement its programmes, if such programmes possibly interfere with the rights of private land owners, whose farms (or part thereof) are registered as private conservation areas. The discussion involves reference to the Constitution of Namibia, and the conclusion drawn is that no additional burdens or obligations are imposed on government, other than those which the state already owes to the private land owner in terms of the land owner's property rights.¹ To state the same from the point of view of the private land owner: the establishment of a private conservation area does not bring with it any further rights or powers from a property law point of view, which the land owner did not have before such establishment.

Finally, the cross sectoral policy interaction is investigated between the legislation which provides for the establishment of private conservation areas, and government's other programmes, especially related to land and the environment.

After a thorough investigation we recommend that private conservation areas should not be dealt with legislatively, physically and in terms of land use planning and ecological and economic policy development, as isolated islands, unconnected to the surrounding land areas, but as integral parts of the greater landscapes. The momentum which is currently being generated with the development of the Regional Integrated Land Use Plans, should be used to fully integrated private conservation areas.

2. THE LEGISLATIVE BASIS FOR PRIVATE GAME PARKS AND PRIVATE NATURE RESERVES

Section 22 of the Nature Conservation Ordinance 4 of 1975 forms the legislative basis for the establishment of private game parks and private nature reserves. Section 22(1) stipulates that a private game parks or private nature reserve may be declared subject to imposition of conditions and that such a declaration is for a period determined in the declaration or until the declaration is withdrawn by the Minister of Environment & Tourism.

¹ Article 16 Constitution of Namibia.

Subsection 22(2) stipulates that an area shall only be declared a private game park or a private nature reserve upon the written application of the owner of the land concerned. For this study, which seeks to determine the actual and potential implications of private nature reserves and private game parks on government programmes, it is thus of great importance to note that private ownership rights over the land areas in question, pre-exist at the time of the declaration of private game parks or private nature reserves.

This study, into the legal implications of private nature reserves and private game parks on government programmes, must therefore examine whether the declaration of any land area as private game parks or private nature reserves, bestow any further rights on the landowner, which the landowner did not already have as mere landowner before the declaration. Furthermore, it is necessary to investigate whether such additional rights have any potential influence on any of government's actual and intended programmes concerning land, the environment, resettlement, or any other.

2.1 Additional Rights of Land Owner of Land Declared as Private Game Parks

The additional rights, which a private land owner has upon declaration of his land as a private game park are to be found in section 23 of the Ordinance. The additional rights, upon declaration of the land as a private nature reserve are contained in section 24 of the Ordinance.

In terms of section 23(1) only the owner of the land, declared as a private game park may at any time hunt any game or other wild animal or bird, except protected and specially protected game. All other persons must obtain the written approval of the Minister, which shall not be granted without the written permission of the landowner. For all the longwinded wording and complicated manner of making the point, section 23 essentially only imposes a permit requirement for the shooting of game on all persons but the owner of the private game park.

This is further confirmed by the ministry's internal memorandum entitled *Current Procedures and Policy on Permits*.² It is therefore essential for this study to highlight from the provisions of section 23 of the Ordinance that despite a declaration of a private game park, the consumptive use of the game therein, is still subject to the permit requirement, and thus the monitoring of game numbers by the Ministry. Declaration of an area as a private game park does therefore not exempt the private landowner from this requirement.

The said ministry internal memorandum further discusses the shooting of game by persons other than the owner or manager. It points out that huntable game species may only be shot by a person other than the owner during the officially proclaimed hunting season (usually June and July and for farms with a game proof fence May to August), but that specially protected game may be shot by any other person on invitation of the owner during any time of the year. The memorandum points out that this is not generally known and not commonly used, and that care should be taken that this [exemption from the permit requirement] should not be abused for trophy hunting purposes. The purpose of this study is not to discuss the permit application and issuing procedures, but it is noteworthy and very relevant for our purposes to refer to the introduction of the memorandum, which states that many practices and procedures regarding permits have no real effect on – and especially do not provide control over the actual utilization of wildlife.

*The permit office issues permits for all forms of wildlife utilization – and generates a massive administrative system to try to keep control on this process – but there is no effective follow-up of the permits issued and what actually happens in the veld.*³

Therefore, when regarding private game parks from the point of view of wildlife monitoring and utilization, it must be acknowledged that the mere establishment of private game parks cannot be investigated in isolation of the reality or otherwise of actual physical localized monitoring and the availability of the necessary resources for enforcement or follow ups.

2 D. Morsbach , Current Procedures of Policy and Permits 27 October 1997, addressed to Dr M Lindeque, the Permanent Secretary of the Ministry of Environment & Tourism at the time.

3 D. Morsbach "Current Procedures of Policy and Permits" 27 October 1997 p 1.

The Ordinance contains in Chapter III “Wild Animals” further provisions relating to hunting, and generally the consumptive use of wildlife, but all the rights granted or restrictions imposed, are in relation to

- » the size and ownership status of the land
- » the relationship of the hunter to the land,
- » the particular species in question and
- » its categorization of the species as either a huntable species, or a protected or specially protected species.
- » the nature and size of the fence surrounding the land, and the status of the fence as a game proof fence or jackal proof fence or adequate fence

Nowhere else in the Ordinance, other than Chapter II “Game Parks and Nature Reserves”, is the status of the land as a private game park or otherwise relevant for the abovementioned rights and obligations or restrictions.

Subsection 22(5) stipulates that the declaration of an area as a private game park or a private nature reserve shall in no way derogate from the provisions of Chapter IV [Problem Animals] and shall apply subject to the provisions of the said Chapter IV. That Chapter IV contains in subsection 54(4) *inter alia* the provision that any nature conservator or any other person authorized or instructed thereto by the Minister, may at any time hunt any problem animal and for such purpose such nature conservator or other person may enter upon any land without the consent of the owner or lessee thereof: Provided that whenever possible notice of such person’s presence on such land shall be given to the occupier thereof or any other person apparently in charge thereof. The possible status of any land as a private game park therefore does not prevent the Ministry of Environment & Tourism to exercise its powers contained in section 54 or generally in Chapter IV.

2.2 Additional Rights Land Owner of Land Declared as Private Nature Reserve

The additional rights, upon declaration of the land as a private nature reserve are contained in section 24 of the Ordinance. In terms of section 24(1) only the landowner may pick any indigenous plant, other than a protected plant in a private nature reserve. For any person other than the owner, the Minister’s written approval (a permit) is required for picking such indigenous plants. The Minister will in terms of section 24(2) only issue such permit if the owner of the land has granted permission thereto.

As in the case of the private game parks in section 23, the private ownership of the land in question is presupposed, and the declaration of an area as a private nature reserve (or indeed the termination or withdrawal of such declaration) does not affect the ownership status and the ownership rights of the private land owner.⁴

Section 24 must be read together with Chapter VI ‘Indigenous Plants’ and Schedule 9 which contains the list of protected plant species.

Since the proclamation of the Ordinance in 1976, the status of natural resources and the traditional knowledge related thereto has evolved, as evidenced by the establishment of the United Nations Convention of Biological Diversity (CBD) of 1993 and the Nagoya Protocol on Genetic Resources and the Fair and Equitable Sharing of the Benefits arising from their Utilisation⁵, as well as Namibia’s efforts to follow through on its international commitments by drafting and hopefully soon also passing an Access to Genetic Resources Bill. The Nagoya Protocol on ABS stipulates in Article 4(1 *bis*) the following:

4 Interview with Mr Nils Odendaal, CEO NamibRand Nature Reserve and Mr Albie Brückner, Chairman NamibRand Nature Reserve 3 August 2012.

5 Nagoya Japan, 18-29 October 2010 available at <http://treaties.un.org/>.

Each party shall take legislative, administrative or policy measures, as appropriate, with the aim of ensuring that benefits arising from the utilization of genetic resources that are held by indigenous and local communities, in accordance with domestic legislation regarding the establishment of rights of these indigenous and local communities over these genetic resources, are shared in a fair and equitable way with the communities concerned, based on mutually agreed terms⁶

2.2.1 The Constitution of Namibia

The most important piece of domestic legislation which must be considered when investigating the implementation of any government programmes is the highest law of the land, the Constitution of the Republic of Namibia. The most relevant part of the Constitution for the purposes of this section is surely the property clause in Article 16:

Article 16 Property

1. All persons shall have the right in any part of Namibia to acquire, own and dispose of all forms of immovable and movable property individually or in association with others and to bequeath their property to their heirs or legatees: provided that Parliament may by legislation prohibit or regulate as it deems expedient the right to acquire property by persons who are not Namibian citizens.
2. The State or a competent body or organ authorised by law may expropriate property in the public interest subject to the payment of just compensation, in accordance with requirements and procedures to be determined by Act of Parliament.

Without stating that the declaration of a private game park or a private nature reserve could ever be used by the owners of such land as a measure to hinder any government programme, it is pointed out that the government could, if necessary apply the provisions of Article 16 of the Constitution to overcome such possible hindrance. We must however emphasise again, that we do not see any power to cause such hindrance flowing from the declaration of any area as a private game park or private nature reserve, but merely from the fact of private ownership of the land.

Furthermore, it must be acknowledged that expropriation may not be government's preferred manner of dealing with possible obstructions to any of its programmes, and that the provisions of Article 16 of the Constitution will for that reason not be applied. Staying in the environmental and natural resource sector for now, there is another Article in the Constitution which is very relevant for the purposes of this study. Chapter 11 of the Constitution contains the Principles of State Policy, and Article 95(I) the provision relating to the protection and promotion of the environment, which has given the Namibian Constitution the reputation as one of the most progressive internationally in the field of environmental protection.

Article 95 (I)

1. The State shall actively promote and maintain the welfare of the people by adopting, inter alia, policies aimed at the following:
2. Maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future; in particular, the Government shall provide measures against the dumping or recycling of foreign nuclear and toxic waste on Namibian territory

6 Article 4(1bis) cursory author's emphasis.

This section is important as it clearly bestows upon Government the highest authority and responsibility for the protection and promotion of the environment. The efforts of the owners of private game parks and private nature reserves are therefore subject to this highest authority of the Government in the area of environmental protection.

The respective roles and responsibilities in environmental stewardship of Government on the one hand and the private sector on the other, need however not be opposing or mutually exclusive. This finds practical application in a programme in which Namibia is once again an international frontrunner, namely the Namibia Protected Landscape Conservation Areas Initiative (NAM-PLACE Project) which is currently being implemented. The objective of the project is "Protected Landscape Conservation Areas re-established and ensure that land uses in areas adjacent to existing Protected Areas are compatible with biodiversity conservation objectives, and corridors are established to sustain the viability of wildlife populations"⁷

The proposed project will establish five Protected Landscape Conservation Areas (PLCA), develop the adaptive collaborative management arrangements for governance of these on a national and a landscape level and create an enabling environment for market incentives to operationalize the PLCAs.

The Rationale behind the PLCAs is to adopt a landscape level conservation approach that goes beyond traditional Protected Areas boundaries or communal conservancies by viewing landscapes as ecological blocks. By adopting this approach, PLCAs will likely improve the returns per-unit-of-investment in PAs by spreading conservation management, and benefits, across a wider scale.

This project aims to demonstrate that all sectors can work together through an integrated approach and that co-management/ participatory approaches that involve the state, communities and the private sector in decision making can lead to better conservation and sustainable livelihoods, including Black Economic Empowerment (BEE). A model will be produced for conserving biodiversity through collaborative arrangements of governance termed PLCAs.⁸

It must therefore be recorded that in Namibia the concept that conservation takes place beyond the defined small areas of parks or nature reserves is gaining momentum. The reality on the ground has therefore outgrown the provisions of the 1975 Nature Conservation Ordinance. This is further evidenced by the establishment of protected areas straddling international borders such as the Ai-ais Richtersfeld Conservation Area. Incidentally, during unrelated discussions with the Project Manager of the Namplace Project, we were informed that subsequent to the approval of the Namplace Project Document, the term 'Protected Area' and the idea carried by the term has fallen into disuse, as the concept is now along the lines of 'conservation area'. This is a more inclusive term, also more inclusive with regard to possible multiple land uses within the same area.

2.2.2 Distinction between Private Game Parks & Private Nature Reserves

During an interview conducted for this study with the Director of Regional Services & Park Management it further became clear that the distinction in the Ordinance between private game parks on the one hand and private nature reserves on the other no longer seems to be relevant.⁹ In any new legislation which will replace the Ordinance, there should only be one category of private conservation area and that the owner of such private conservation area should then be able to decide whether the conservation will be with game or without game. The science of nature conservation has developed much since the coming into force of the Ordinance, as shown in the part of this study dealing with the ecological implications of private game parks and private nature reserves. Any future legislation, shall no doubt, incorporate the current scientific approach of integrated nature conservation, and discard the untenable distinction between conservation of wildlife and conservation of plants.

⁷ Ministry of Environment & Tourism: Project Document Namibia Protected Landscape Conservation Areas Initiative (NAM-PLACE) 2011 – 2015, p 54, paragraph 181

⁸ Ibid, p 53, paragraphs 174 - 176

⁹ Interview with Colgar Sikopo, Director of Regional Services & Park Management, MET 10 August 2012.

2.3 General Powers of the Minister and of Nature Conservators

One final section of the Ordinance that must be considered for the purposes of this study, and especially with regard to the Ministry of Environment & Tourism's responsibility to enforce the provisions of the Ordinance, is Chapter VII. This chapter, entitled 'General' contains the powers of the Minister and of nature conservators, including the specific powers of entry, search and seizure of nature conservators on any land, to enforce the provisions of the Ordinance. These powers are in no way restricted by the status of any land as either a private game park or a private nature reserve.

A careful reading of Chapter VII, and especially of the powers bestowed on nature conservators in section 81 confirms the interpretation above, that the purpose behind the provisions of sections 23 and 24 was to establish the parameters of permit requirements for consumptive use over natural resources by persons other than owners of the land. The possibility of the creation of private nature reserves and private game reserves in terms of section 22 of the Ordinance, read together with the provisions of sections 23 and 24 thus never had the intention of excluding or diminishing the Ministry's powers and responsibilities with regard to nature conservation. The abovementioned ministry internal memorandum on the permit procedure furthermore confirms that in practice, the Ministry's role is also not diminished. This does however not detract from the reality that there is a general lack of resources to effectively monitor natural resources on all private land, be it registered as private conservation areas or not (and perhaps also on communal land and other state land).¹⁰

However, as will become clearer in Chapter 2, the legislative framework which fully reserves wildlife management authority over privately held land to the Ministry severely restricts the effectiveness with which the private land owner can manage, protect and promote the entire bio-diversity on the land.

2.3.1 *Environmental Management Act 7 of 2007*

The Environmental Management Act is much more recent piece of legislation which confirms the Government's uppermost responsibility in environmental management, and that the possibility of establishing private conservation areas in terms of the Ordinance do not detract from this superior jurisdiction of the state.

The object of this Act includes the prevention and mitigation of the significant effects of activities on the environment.¹¹ The Act further contains principles of environmental management which guide the implementation of the Act and any other law relating to the protection of the environment.¹² The principles of environmental management include inter alia the following:

- (d) equitable access to environmental resources must be promoted and the functional integrity of ecological systems must be taken into account to ensure the sustainability of the systems and to prevent harmful effects;
- and
- (l) damage to the environment must be prevented and activities which cause such damage must be reduced, limited or controlled.¹³

Therefore the notion of ecological systems which by their very nature incorporate more than one owner's piece of land, preceded the Namplace Project, and was already enacted in 2007. Bearing this in mind, together with the work of the Namplace Project, it can be expected that the establishment private conservation areas will in future be more related to landscape type multi-stakeholder conservation areas, and less based on registration in terms of the provisions of the Ordinance.

The most recent version of the Protected Areas and Wildlife Management Bill, is reportedly currently under reworking, on advise of the Attorney General, so it does not warrant to comment on the bill for the for the purposes of this study. Suffice it to say that one of the earlier versions, included a section in terms of which

10 Interview with Mrs Wilma Moller, Permit Officer MET 8 August 2012.

11 Environmental Management Act 7 of 2007, Section 2

12 Ibid, section 3(1)(a)

13 Ibid, section 3(2)(d) &(l)

The Minister, with the concurrence of the Minister responsible for lands, may conclude agreements with the owners of freehold land or the representatives of conservancies to have such land declared as any of the categories of protected area described in section 20, as appropriate, if such agreements and declarations serve the purpose of this Act by enhancing the coverage of biodiversity and ecosystems in protected areas or serve a purpose that is otherwise in the interest of the Ministry in meeting its objectives concerning the management of protected areas or the protection of biodiversity.¹⁴

Another section, dealing with co-management of protected areas stipulates that

Subject to subsection (3), the Minister may enter into written agreements with any local, regional or traditional authority, conservancy or legal person which provides for the co-operative management of human activities, wildlife and/or wildlife habitats within a protected area.

We are therefore confident that the new approach to conservation, which emphasises cooperation among different stakeholders, and views entire ecological systems as the units of conservation, rather than individually owned properties has firmly taken root among all stakeholders in conservation in Namibia. It is therefore our view that the provisions of the Ordinance, relating to the registration of private conservation areas, should not be perceived as and do not constitute a threat to Government's conservation efforts. The practice and the general approach to conservation has outgrown and developed beyond the provisions of the Ordinance.

3. CROSS-SECTORAL POLICY INTERACTION WITH SPECIFIC GOVERNMENT PROGRAMMES

Having established in section 1 above, that the registration of private conservation areas does not bestow greater powers on private land owners to obstruct Government programmes, and that it does not impose any additional restrictions on Government which are not already applicable from the mere private land ownership of the areas in question, it is nevertheless of interest to investigate specific Government programmes which may have been regarded as possibly threatened by the registration of private conservation areas.

3.1 Land Reform Programme

The most obvious national programme that may be perceived as possibly compromised by the establishment of private conservation areas, would be the land reform programme in terms of which the land hunger of thousands of Namibians is addressed by acquisition by the state of privately owned farms, for the purpose of resettling landless Namibians. The legislative basis for the land reform programmes is the Agricultural (Commercial) Land Reform Act 6 of 1995.

In terms of section 14 of the Agricultural (Commercial) Land Reform Act, the Minister of lands shall, out of moneys available in the Land Acquisition and Development Fund, acquire in the public interest, in accordance with the provision of this Act, agricultural land in order to make such land available for agricultural purposes to Namibian citizens who do not own or otherwise have the use of agricultural land or adequate agricultural land, and foremost to those Namibians who have been socially, economically or educationally disadvantaged by past discriminatory laws or practices.¹⁵

One thing that comes to mind when reading the section dealing with the Minister's power to acquire agricultural land for the purposes of land reform, is whether the declaration of any land as a private conservation area in terms of the Nature Conservation Area, puts the land beyond the Minister's Land Reform powers, as it may then no longer constitute agricultural land. The term "agricultural land" is however defined in the Agricultural (Commercial) Land Reform Act as definition section as follows:

14 Protected Areas and Management of Wildlife Bill 2005 section 21(2).

15 Agricultural (Commercial) Land Reform Act 6 of 1995, Part II, Section 14

“agricultural land” means any land or an undivided share in land, other than-

- (a) *land situated in a local authority area as defined in section 1 of the Local Authorities Act, 1992 (Act 23 of 1992);*
- (b) *land situated in a settlement area as defined in section 1 of the Regional Councils Act, 1992 (Act 22 of 1992);*
- (c) *land of which the State is the owner or which is held in trust by the State or any Minister for any person ;*
- (d) *land which the Minister by notice in the Gazette excludes from the provisions of this Act;*

Therefore, registration of any private land or any portion thereof as a private conservation area in terms of the Ordinance, does not provide any extra protection against possible acquisition thereof for land reform purposes, because the land remains agricultural land for the purposes of the Agricultural (Commercial) Land Reform Act. Acquisition here includes the compulsory acquisition, as section 20 stipulates that where the Minister of Lands and the owner of the land are unable to negotiate the sale of such property by mutual agreement or the whereabouts of the owner cannot be ascertained, the Minister may subject to payment of compensation in accordance with the provisions of the Act, expropriate such property for land reform purposes.

There furthermore is no provision in the Act which would incentivize landowners to register their land as private conservation areas for purely speculative reasons, so as to inflate the amount of compensation that they would receive for it, in the event of acquisition thereof by the state. Section 25 stipulates the basis on which compensation is to be determined as follows:

- (1) The amount of compensation to be paid to an owner in respect of property expropriated in terms of this Act, shall be determined with due regard to the provisions of subsection (5), but shall not, subject to subsection (2), exceed-
 - (a) where the property expropriated is agricultural land, the aggregate of-
 - (i) the amount which the land would have realized if sold on the date of notice on the open market by a willing seller to a willing buyer; and
 - (ii) an amount to compensate any actual financial loss caused by the expropriation; and
 - (b) where the property expropriated is a right, an amount to compensate any actual financial loss caused by the expropriation of the right.

Section 25(1) shows that the amount of compensation payable must be determined on a case by case basis. The value of agricultural land does not automatically increase in value by the mere fact of registration thereof as a private conservation area. Nor does such registration per se increase the amount of financial loss caused by a possible expropriation. These are matters which the Minister and the Land Reform Advisory Commission¹⁶ have to determine with reference to the actual operations on the land concerned and the revenue being generated there. In the event that a land owner refuses to accept an offer of compensation because the offer is lower than what the land owner demands, then the matter is determined by the Lands Tribunal.¹⁷

3.2 The Resettlement Programme

The second programme to immediately come to mind as possibly being threatened by the practice of establishing private conservation areas, is the resettlement programme. The resettlement programme is obviously part of the wider land reform programme, and resettlement onto previously privately owned land can only occur after acquisition by the Government of such land through voluntary sale or expropriation, as discussed above.

¹⁶ Created in section 2 of the Agricultural (Commercial) Land Reform Act.

¹⁷ Created by section 63 of the Act.

According to the National Resettlement Policy¹⁸ the resettlement philosophy is that resettlement does not only mean providing people with land, housing, infrastructure, knowledge and skills to maintain and develop their new environment and entitlements but it also means establishing an innovative attitude, in which the spirit of self-reliance is the underlying principle on which development is to be built by the Government or the people themselves.¹⁹

Further, the immediate aim of the resettlement programme is to make settlers self reliant either in terms of food production or self employment and income generating skills. To this end beneficiaries should achieve an improvement in living standards, enhance regional development throughout the country, through the beneficial and wise use of natural and human resources.²⁰ There seems to be general consensus among analysts, politicians, technocrats, resettlement programme applicants and beneficiaries that the resettlement programme faces great challenges. There is great disagreement about the causes for such challenges. This study is not the place to discuss the merits and demerits of the resettlement programme, so we will limit the discussions to the points which in our opinion clearly demonstrates that the establishment of private conservation areas has no impact at all on the resettlement programme.²¹ It is in our opinion accurate to say that the challenges of the resettlement programme, lie in the implementation of the resettlement policy.

We cannot fault the recommendations made by Shigwedha in a critical review of the implementation and effects of the National Resettlement Policy (NRP) in Namibia²²

There are countless problems in the implementation process of the resettlement program. This is because this program is so complex with various players involved. Most of the interest groups have been calling for the GRN to improve on some of the problems in order for the program to succeed. More work still needs to be done in order to improve the implementation process and eventually increase output

These improvements are as follow: The Agricultural (Commercial) Land Reform Act, 1995 (Act 6 of 1995) needs to be improved in order to increase the pace of the process and make it possible for land acquisition under the willing buyer willing seller faster. More research still needs to be done in order to determine the extent of the success of this program. Interest group[s] must not just criticize the GRN program but they must be in [a] position to give proper advice. In fact they must be part and parcel of the resettlement process. Farmers unions such as NNFU and NAU have been part and parcel of this program and on several occasions, have made contributions towards resolving the resettlement issues. This trend is appreciated and others must follow this example too. Contributions from other interest groups however need proper coordination. The GRN must seriously address the issue of corruption, favoritisms and nepotism, which are rife in the whole selection process. GRN must also revisit its existing mechanisms that are put in place by the MLRR to curb corruption. For instance some well to do people must no more be selected for resettlement but instead the poor and the needy must benefit from this program. Selection list must be open to public for scrutiny. There is a need for an impartial body to identify those in need.

Resettlement should target people in the rural areas and selection on the basis of political affiliation must be stopped. Beneficiaries with farming interest at heart must be selected and given farms in order to promote productivity. More independent research needs to be done in order to measure the impact of the program and improve it more and help to understand the process of implementation and its impact more.

The 1000 hectares average or two camps allotted to beneficiaries are not adequate and should be revisited. At least 5000 or well thought of hectares should be allocated. Beneficiaries should be given opportunities and they at least must be allocated between 15 years to improve their land. GRN should commit itself to the change of the culture of nomadic people. Introducing training on farming can do this. Beneficiaries who do not have access to loans facilities and loan institutions such as AgriBank should be assisted to get access to such facilities.

18 Ministry of Lands, Resettlement and Rehabilitation, July 2001

19 National Resettlement Policy 2001, section 1.3

20 Ibid, section 2.1

21 Interview with Colgar Sikopo, Director of Regional Services & Park Management, MET 10 August 2012.

22 Leevi Hafeni Shigwedha, A Thesis Submitted in partial fulfilment of the requirements for the degree of Master of Public Administration of the University of Namibia, Department of Political and Administrative Studies, Faculty of Economics and Management Science, May 2004, p 70

It follows very clearly from the above, that some private land owners and their attitude toward land reform and resettlement is integral and vital to the resettlement programme, the main problems to the successful implementation of the resettlement programme cannot be sought in what private land owners are doing, least of all the practice of registering private farms as private conservation areas.

Furthermore, it is very instructive to also quote extensively from the Nepru Working Paper No 111, entitled The SADC Land and Agrarian Reform Initiative, The Case of Namibia,²³ Chapter 4 of the said paper is entitled: Impact of Land and Agrarian Reform:

3.3 Environment

Given the widespread existence of degraded pasture and farming lands in Namibia, it may be necessary for the MLR to build its own capacity to restore farms before they are allocated to the resettlement process. In other words, 'land reform' has an ecological quality as well as a social and political quality: degraded lands cannot be resettled, so they must either be left idle or restored. Plans for environmental reconstruction of degraded commercial and communal farmland also have to be developed. Ironically, the groundwork for this reconstruction can provide jobs for labourers and skills that can later be put to use in resettlement projects. Obviously, land with little carrying capacity cannot provide meaningful employment for hundreds of resettlement beneficiaries. Land reform must therefore begin with a rational assessment of the future potential of each commercial farm selected for resettlement. In addition, it is very important that the National Assembly passes the following, already proposed, legislation as soon as possible:

- Environmental Management and Assessment Bill
- Parks and Wildlife Management Bill
- Pollution Control and Waste Management Bill
- Biosafety Bill
- Access to Biological Resources and Associated Traditional Knowledge Bill

In the absence of a comprehensive collective environmental policy framework, existing Acts pertaining to the environment are too fragmented to be of any use in land reform planning and land development. It is thus recommended that the abovementioned laws be passed to complement the existing land reform policies and legislation. Land reform and resettlement policy should form part of the broader policy on agricultural and rural development. Plans for environmental reconstruction of degraded commercial and communal farmland also have to be developed. Thus, greater emphasis should be placed on environmental and land reform policies so as to provide for the rehabilitation of overgrazed and bush-encroached land that has environmentally degraded the land's value.²⁴

Both authors identify the lack of coordination, not only between Government and non-government stakeholders, but also between different Government institutions, as a problem in the implementation of land reform and environmental programmes. Government has recognized this problem and implemented the Integrated Regional Land Use Planning Programme, which thus far has produced the Karas Integrated Land Use Plan 2011 – 2016.²⁵ The Project Concept note to the pilot project in the Karas Region, states the following:

The Government of the Republic of Namibia has recognized the need for integrated efforts to coordinate the development of the country. Therefore, the MLR attempts to follow the approach of Integrated Land Use Planning through a process which enables collaboration, interactions and knowledge exchange between various stakeholders in order to achieve conflict resolution and bottle-neck identification as well as drawing together the sectorally focused planning efforts. Integrated Land use Planning is seen as mechanism for making comprehensive decisions about the use of land resources and to provide collaborative management and implementation strategies for sustainable future

23 Namibia Economic Policy Research Institute (NEPRU), NEPRU Working Paper No 111 by Willem Odendaal (Legal Assistance Centre), December 2006 available at www.nepru.org.na.

24 At p 46

25 Ministry of Lands and Resettlement, Karas Integrated Regional Land Use Plan 2011 – 2016, March 2011

land use across jurisdictions.²⁶

The availability of the completed Karas Integrated Land Use Plan (KIRLUP), provides us with an insight into the land use planning approach of the stakeholders in that region, and confirms our finding above, that conservation is now generally seen as beyond the borders of any one landholding, be it private, state owned or communally owned.

Vision 1 of the Karas Integrated Land Use Plan is: Protect and integrate key biodiversity areas and protected areas. Section III of this vision 1 is entitled 'Private' and reads as follows:

(III) Private

The Greater Fish River Canyon Complex [GFRCC] falls in the protected area zone. Even though tourism activities are taking place in some areas of the complex, the greater area is utilized for conservation purposes with pockets of tourism activities in smaller areas. This zone includes the GFRCC and all other current and future private parks in the region. The Greater Fish River Canyon Complex aims at bringing together a group of farms surrounding the Fish River Canyon to ensure better management and sustainability for the area. This will also ensure the east-west movement of wildlife, creating wildlife corridors that can connect various protected areas.

This complex together with the /Ai-/Ais Hot Springs Park and the proposed land consolidation strategy of MET will eventually create one conservation area stretching from the Namib-Naukluft down the Sperrgebiet, east towards the boundary of the Canyon Complex, along the Orange River up to the eastern boundary of the Karas Region and connecting to the Kgalagadi Transfrontier Park. In itself this will be a major advantage for the region, making this one of the biggest conservation areas in Namibia. Farms surrounding this conservation area should be encouraged to become part of this conservation area and diversity into game farming and tourism.

In this zone the land use is conservation mixed with tourism. Within this zone, all efforts must be made to apply conservation methods. All current and further private parks should be officially declared through the MET and must be in accordance with the Nature Conservation Ordinance (1975). All protected animals and plants must be conserved in accordance with the Nature Conservation Ordinance, Forest Act, and the Environmental Management Act. Strict implementation of the MAWF laws will also afford protection to these areas.

Furthermore, Vision 3 is entitled "Strengthen the agriculture industry in the region and promotion of livelihood diversification" and yet it includes a section on "Game Farming Zone":

Game farming is not restricted solely to the zone as indicated on the map. Game farming should not be restricted to specific areas and is generally recommended throughout the region except in areas where it would conflict with other land uses. Game farming is given a higher recommendation when it is situated in proximity to existing parks and it should be the land use of choice. Introduction of wildlife species that have become extinct in the region over the years should be encouraged, but care should be taken when introducing such species. Any introduction of wildlife should be discussed with MET and must be in accordance with the Nature Conservation Ordinance and the Environmental Management Act. Research should be conducted regarding the species that are indigenous to the area and the carrying capacity of species that are recommended for introduction.

The possibility of farming with high value game for income diversification has great potential in the region and should be encouraged. Additional research should be conducted on the economic potential of farming with wildlife compared to traditional livestock farming and ideas should be shared with the communities in the region. Further research should be done on emerging markets and the potential for usage of game meat vs. livestock meat.

26 Ministry of Lands & Resettlement, Division Land Use Planning & Allocation, Project Concept: "Modelling Integrated Regional Land Use Planning" Pilot Region Karas, January 2009, p 1

Communal conservancies should be encouraged to invest in farming with high value game species for sale or for trophy hunting so as to ensure a sustainable income and diversification of their income base.

The Agriculture Zones are in line with the proposals set out in Vision 2030 and NDP3. The identification of certain areas for large stock, irrigation and game farming aim to ensure that land is optimally utilized and land degradation is minimized. Encouraging the diversification into game farming and tourism also ensures a wider economic base for the region.

4. CONCLUSION & RECOMMENDATION

It would in our opinion be superfluous to go into every single Government programme relating to land and environment to establish the possible implications thereon of the establishment of private conservation areas in terms of the ordinance. The above clearly shows that the establishment of such private conservation areas do not have such strong implications as to be able to influence other Government programmes. The purpose behind the relevant sections of the Nature Conservation Ordinance was to regulate the consumption of wildlife and plants. The intention behind the sections was never to grant the land owners any additional rights from a property law point of view, or to impose any additional obligations on Government from an administrative law point of view or even from a constitutional law point of view when it comes to expropriation for example. Not only was none of the above the intention, but the sections also don't have any such effect in law.

Nature conservation has evolved since the promulgation of the Nature Conservation Ordinance, and is today much less compartmentalized. That is why we recommend that any new legislation which would replace the Ordinance, should provide for the possibility of one type of private conservation area, instead of providing for the provision of private game parks relating to wildlife, and private nature reserves relating to plants.

From the current programmes being implemented by Government, especially the landscape conservation approach of the Nam-Place Project of the Ministry of Environment & Tourism, as well as the Regional Integrated Land Use Planning Programme in the Ministry of Lands & Resettlement we deduce that private conservation areas are not perceived as threats to any Government programmes, but are welcomed as complimentary land use models that should be encouraged and integrated into the greater land area in question.

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CHAPTER 2

IMPLICATIONS OF PRIVATE GAME PARKS AND NATURE RESERVES ON BIODIVERSITY CONSERVATION

1. INTRODUCTION

Biodiversity conservation involves care of:

- individual species that contribute to biodiversity;
- balance between different functional groups of species that contributes to their diversity;
- the resource base that supports biodiversity, which in Namibia's case is primarily rangeland; and
- healthy ecosystem functions, which are performed by a high diversity of species interacting with each other and with their abiotic environment.

Wildlife species are an important component of biodiversity that largely depend on regular seasonal migrations and/or opportunistic movements over large areas for high productivity and healthy ecosystem functioning. Unhindered access to optimal grazing areas of different seasons is therefore a key component of biodiversity conservation. The balance between different types of wildlife species is also of significance, such as between selective and bulk browsers and grazers, with damage often caused by an excess of gregarious short-grass grazing species (Smit 2002).

2. NATURAL BIODIVERSITY CONSERVATION

Before investigating the influence of private parks and reserves on biodiversity conservation, it may be useful to consider how nature kept the rangeland healthy and productive before human interference. Over large parts of Africa, the regular migrations of wild animals played a critical role in ensuring that grasses received occasional rest, which allowed them to grow vigorously when animals returned (Fynn & Bonyongo 2011).

Animals generally migrated between rainy season areas with the most fertile soils, and dry season areas with the most soil moisture. The more fertile soils provided minerals for lactating animals in the rainy season, whereas the areas with more soil moisture provided green leaves that persisted for longer into the dry season and prevented animals from losing too much weight before the rains returned (Fynn & Bonyongo 2011). Superimposed on such regular migrations, were irregular movements in response to factors such as fires and localized rain showers.

As a result, the grasses that had been repeatedly grazed, subsequently received rest when the grazing animals migrated or moved irregularly to other areas. During such rest the grasses could regain vigour and replenish their root reserves, thus allowing them to continue to re-grow rapidly after animals subsequently returned and grazed on the rested grasses. Repeated grazing of the same grass plant within a season ensured that the grass remained in a nutritious, leafy state, instead of becoming unsuitable for animals by growing taller and accumulating more stem material (Fynn & Bonyongo 2011).

Such regular grazing within the season also resulted in healthy grass roots secreting sugars which fed beneficial microorganisms in the soil (Hamilton & Frank 2001). The microorganisms also fed on portions of the root system that died as a result of drawing on food reserves to grow new leaves. The microorganisms in return benefited the grasses by converting mineral nutrients that were tightly held onto soil particles into forms that could be taken up by the plant roots (Hamilton & Frank 2001).

Fynn & Bonyongo (2011) describe an important migration that used to occur between the short nutritious grasses around the Etosha Pan in the growing season, to wherever floods from or in Angola had reached down the Cuvelai system during the

dry season. It is likely that nomadic herders made similar movements with their livestock, while utilizing game animals when needed, resulting in a highly productive win-win situation.

Under such natural migrations, a high density of perennial grasses encouraged rain water to enter the soil and prevented the soil from eroding away too fast. The nutrients needed by the grasses were recycled largely through animal dung, which was taken into the soil by dung beetles during the growing season (Walters 2008) and by termites during the dry season (Turner 2008). Such 'ecological engineers' also perform other important ecosystem functions, such as improving the infiltration of rain water through their tunnels into the soil and preventing flies and parasites from breeding in dung that would otherwise remain on the soil surface.

The occasional fire, caused by lightning, prevented masses of young bushes from becoming established to cause bush encroachment (Zimmermann et al. 2008). The fires would have spread through areas where there was sufficient fuel load, which would have received rest from grazing animals and therefore had strong root reserves to regrow well after the fire.

Monitoring and record keeping are important components of biodiversity conservation that allow wise decision making for adaptive management (Stuart-Hill 1989). Local level monitoring is particularly useful and can be linked to broader scale official monitoring (Klintonberg et al. 2008). Due to the segregation effects of many parks and reserves, Western & Gichohi (1993) suggest the use of ecosystem viability analysis to guide decision making on appropriate management.

3. BIODIVERSITY LOSS

Natural migrations and their resulting high productivity (Fynn 2012) were interfered with by human interventions, such as the erection of fences that blocked off migratory routes, and provision of well and borehole water and control of large predators that allowed livestock and wild herbivores to remain year-round in the same area for year after year. This causes the animals to overgraze the best grasses, because they preferentially revisit previously grazed grasses to feed on the more nutritious regrown shoots (O'Connor 1992) and thereby draw down the root reserves. If the area is lightly stocked then small patches that previously had the most nutritious grasses become bare and slowly expand, while areas with ungrazed grasses lose their vigour as the grasses accumulate old material and become moribund. If the area is heavily stocked, then larger bare patches expand at a fast rate, leading to rapid desertification (Tongway & Ludwig 1997). Heavy stocking often occurs on small game-fenced areas where predators have been controlled and where owners face bureaucratic delays in obtaining permission to profitably reduce the size of their game populations.

Some farmers apply rotational grazing, by moving their livestock from paddock to paddock, allowing paddocks to rest for a while after being grazed (Rowland 1974). However, in most cases the rest that is provided in the growing season, when grasses are able to regrow, is only for a few weeks, which is too short for the root reserves to be fully replenished. In addition, the restriction of livestock to smaller fenced areas limits their choice of nutritional plants and suddenly exposes them to taller plants when moved to the next paddock, both of which tend to lower the animal production (Savory 1997). Furthermore, game animals tend to follow cattle rotations, to feed on the nutritious regrowth from grasses that are supposed to be resting. Slower rotations, such as the simple year-long grazing and resting promoted by Riaan Dames (Zimmermann & Kamukuenjandje 2010), may provide sufficient rest for grasses if the game animals prefer to graze where cattle recently grazed.

It is more difficult to apply rotational grazing to wild animals that are confined to game fenced areas. Continuous grazing is the norm within game paddocks, often leading to severely overgrazed areas especially if many of the stocked game animals are of species of gregarious short-grass grazers (Zimmermann 2009). A further reason why game farms often have worse rangeland condition than neighbouring livestock farms is that the higher income from game animals allows game farmers to buy hay and other supplementary feeds to maintain high stock numbers during drought. In contrast, low stock numbers at the end of the drought facilitate recovery of rangeland condition. Perennial grasses are most in need of rest after drought (Ward & Ngairorue 2000), which occurs in natural systems through high mortality among wild animals and in livestock systems

through de-stocking through sale of excess livestock or reduced breeding. Furthermore, game farmers who surround their game animals with game-proof fencing tend to be less tolerant of predators. Van der Waal (2011) expresses the opinion that farmers of mixed game-livestock ranches in Namibia tend to overstock their grass layer.

Reduction in protective soil cover often leads to erosion processes that create vicious circles of negative re-enforcement. The efficiency of use of Namibia's limited rainfall declines as less water infiltrates into the ground and more gets lost in runoff (Pringle et al. 2011). Such dehydration of rangelands leads to further biodiversity loss as bushes encroach onto patches of hydromorphic grasslands, leading to homogenization of previously diverse rangelands and denying animals from accessing key drought buffering sites in the landscape (Tinley 1982). Gullies are often initiated by water flowing down vehicle tracks, which are particularly prevalent where high volume tourism for game viewing is practiced, or down animal tracks, especially where water points were established at the keyline in the landscape, where the slope changes from steep to gentle, and where water flow changes from concentrating to spreading (Pringle et al. 2011). Prevention is better than cure, but if rangelands are degraded in this manner then restoration is possible, although it may require a lot of effort (Kuatjirue et al. 2010).

Although fire control has become a major management activity, fires sometimes burn earlier in the dry season than they would if started by lightning. Such early fires may be started by vandals or by negligence, or even by early-burning programmes aimed at reducing fuel loads to prevent later fires. These early fires tend to weaken the perennial grasses that are forced to break dormancy too early and expose their valuable food and water reserves to the hardships of the dry season. In addition, bushes are usually more resistant to fires earlier in the dry season. Therefore early fires contribute to rangeland degradation and bush encroachment (Zimmermann et al. 2008)

Many of the veterinary remedies that farmers treat their livestock with against intestinal worms are also toxic to dung beetles that feed on the dung of treated livestock (Krüger & Scholtz 1997), which then prevents the dung beetles from performing their important ecosystem functions. Nutrient cycling is further disrupted by the kraaling of livestock that redistributes soil nutrients, diluting them in the majority of the rangeland and concentrating them in kraals (Muchiru et al. 2003). Farming with game animals has the advantage of avoiding such disruptions to biodiversity, while treating the causes of parasite outbreaks avoids the need for toxic veterinary remedies (Zimmermann et al. 2009).

4. LAND AVAILABLE FOR NAMIBIAN WILDLIFE

Although state-run protected areas cover 16.6% of Namibia's land surface of approximately 824,000 km², none of them are viable as independently functioning ecosystems. Jokisch (2009) investigated the possibility of commercial farmland to the south-west of Etosha National Park acting as a buffer for animals using the park. However, the more significant migrations of wild animals from their growing season grazing area around Etosha Pan to dry season areas north of the current park were cut off by the northern fence erected during the early 1960s that prevented animals from accessing green grass in Cuvelai floodplains during the dry season, which resulted in a drastic crash in numbers of wild animals (Fynn & Bunyongo, 2011). Similarly the communal farmers north of Etosha were denied access to the mineral-rich grazing around Etosha Pan during the growing season, forcing their livestock to graze on grass of poorer mineral content all year long, resulting in many perennial grasses being replaced by annual grasses and lowering livestock productivity, a lose-lose situation.

Freehold land plays an important role in housing Namibia's wild animals. Barnes et al. (2009) estimated that in 2004, 88% of Namibia's wild animal numbers occurred on private land. Indeed, the integration of wildlife production into rangeland management practices is widespread among Namibian cattle farmers (McGranahan, 2008). A list of the 156 private game parks and nature reserves registered in Namibia indicates that they cover an area of 9 670 km², which covers less than 1.2% of Namibia's land surface. However, it seems likely that this list is incomplete, as well as including reserves that were subsequently de-proclaimed. Some Government gazette notices indicated proclamation of some private reserves that do not appear on the list. In addition, the MET permit office provided another list that was apparently of private reserves that had applied for permits to use game animals, yet many of these listed reserves did not appear on the previous list of 156 private parks and reserves.

There were also some de-proclamation notices in Government gazettes for reserves that did not appear on the provided list.

Lindsey (2011) estimates that 32 000 km² of Namibia's commercial farmland is used exclusively for wildlife-based land uses, out of 288 000 km² of commercial farmland that makes economic use of wildlife, mostly in combination with livestock. Therefore, based upon details provided in the incomplete list, it would appear that 30% of commercial farmland used exclusively for wildlife based land uses, has been registered as private game parks or nature reserves. The above statistics are summarized in Figure 1. The size of the listed private parks and reserves ranged between 51 ha and 34 235 ha, with a median size of 5 078 ha. The listed proclamations occurred between 1959 and 2009, with the mode of 23 proclamations having taken place in 1974.

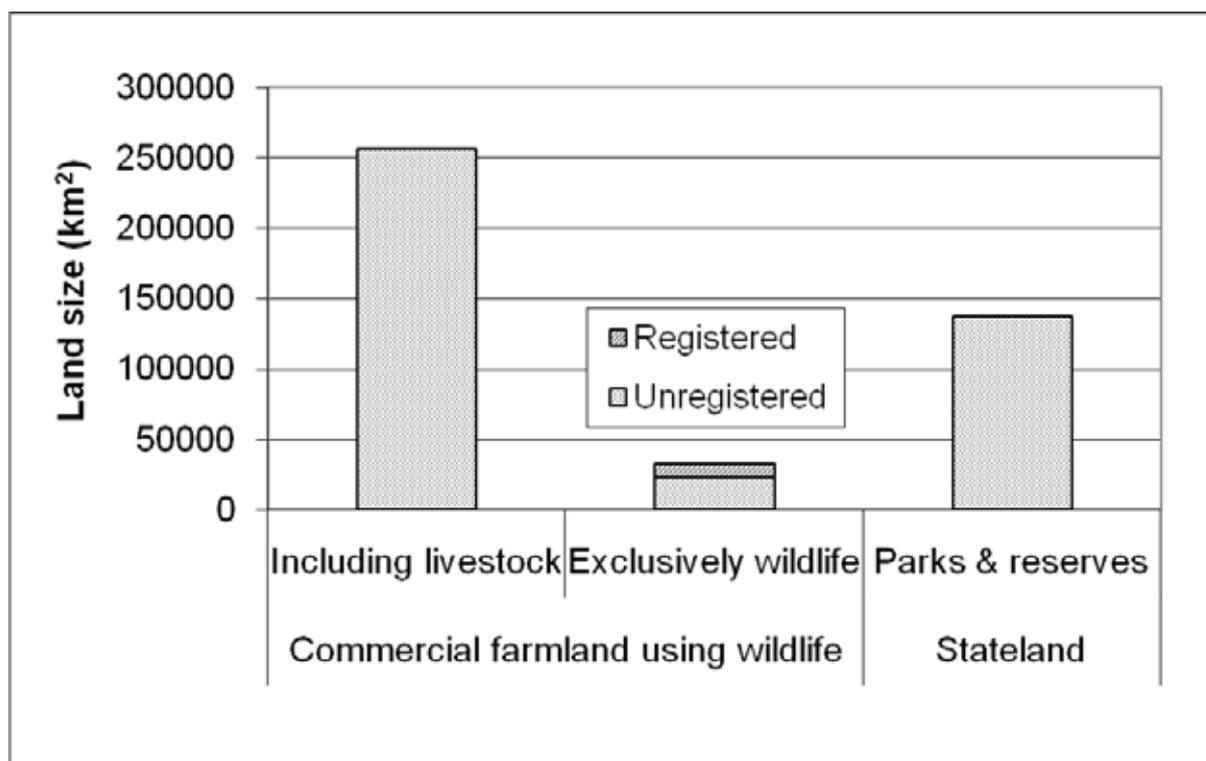


Figure 1: Land surface of Namibia where wildlife is managed. The legend of 'Registered and Unregistered' applies only to the commercial farmland that is exclusively used for wildlife, referring to registration as private game park or nature reserve.

Most Namibian farms found to advertise themselves as 'private nature reserves' on the Internet are not actually registered as such. It seems that there is little incentive to do so and that registration would impose restrictions that would hinder wise management of their natural resources.

Based upon the relative land sizes covered by the different types of commercial farms, it seems likely that the registered private parks and reserves contribute less to biodiversity conservation than the unregistered farms used exclusively for wildlife-based land uses. Similarly, the registered private parks and reserves are likely to contribute less to biodiversity conservation than the commercial farms using wildlife where livestock are also reared, since the latter occupy 26 times more area. However, the livestock farms will largely favour game species that have adapted to surviving in fenced land, while the quality of their rangeland depends largely on how well the farmers practice grazing management. Some cattle farmers modify their fences to become 'game-friendly', such as by removing the lower strand of wire to facilitate crossing by crawling game species, or by using short droppers that connect only two strands that alternate in height for medium sized animals to climb through, or by constructing lowered game passageways at intervals along their fences, some large enough for mountain zebra to pass under.

The Waterberg Plateau Park, which is Namibia's rare species breeding park, houses approximately 600 buffalo that are certified free of the foot-and-mouth virus (le Roux, 2011). However, veterinary restrictions prevent their reintroduction to private parks and reserves.

5. LIMITATIONS TO WILDLIFE-BASED LAND USE BY FARMERS

Lindsey (2011) states that “The development and expansion of wildlife-based land use to its full potential on freehold land in Namibia is significantly hampered by three aspects of legislation:

- » veterinary restrictions preventing reintroduction of buffaloes (the single-most important species for generating returns from wildlife-based land use);
- » failure to devolve user rights over wildlife to land owners more fully (or to the same extent as in South Africa and Zimbabwe); and
- » preferential allocation of permits to use wildlife to farmers with perimeter game fencing, rather than to those farmers whose land is part of larger, open, co-managed conservancies.”

In addition to Lindsey’s first aspect, buffaloes not only earn high monetary profit but also provide the important ecosystem function of bulk grazing that keeps perennial grasses in a leafy, nutritional state of high productivity. Until such time as the veterinary restriction on farming with buffaloes is lifted, game farmers with a predominance of selective grazers may benefit from the use of cattle to provide this ecosystem function on game farms (Knight 2010).

In addition to Lindsey’s second aspect, the large bureaucracy involved with wildlife-based land use may act as a deterrent to livestock farmers who consider farming with game animals. The need to apply for permits to keep or use game animals, have the farm inspected and await the outcome, involves far more bureaucracy than is required for farming with domesticated animals that are less well adapted to Namibia’s harsh environment.

Restrictions placed by MET on farmers who suffer from wild animals raiding their crops or preying on their livestock or injuring or killing humans, furthermore threaten wildlife in the longer term through creation or re-enforcement of existing negative attitudes towards wildlife. The rapid increase in elephants in northern Namibia, particularly Caprivi, has placed severe strain on crop farmers who find it impractical to rely on MET staff that usually take long to respond, if at all. Decisions on compensation follow a lengthy bureaucratic process and are usually perceived as being grossly inadequate, yet elephant quotas for northern conservancies remain very low when compared to the size of the elephant population.

It is not only the restrictions placed on farmers by MET that hampers use of wildlife, but also restrictions imposed by international treaties such as CITES. The ban on trade in ivory and rhino horn simply fuels poaching and illegal trade to meet the increasing demand that could contribute enormous wealth if legalized. Farmers would be able to spend more on controls to prevent poaching if they were to obtain high income from free trade in wildlife and its products. MET’s efforts to lobby for freer wildlife trade are indeed commendable.

Although the custodian programme of MET allows committed farmers to care for valuable rhinos, and although the restocking programme of MET facilitates emerging farmers to restock their farms with game species, such translocations of game animals do not necessarily contribute to biodiversity conservation. Animals that grew up in one environment will not automatically adapt to a new environment. Sufficient time, sometimes over several generations, may be needed for newly translocated animals to learn about their new environment and adjust accordingly. Much of the survival knowledge of animals is learned from mother to offspring, such as where and when to migrate, which new plant species can be grazed on and which are poisonous (Provenza 2008). Similarly, the removal of fences does not automatically lead to animals reinstating old migrations. Animals are creatures of habit and if confined by fencing for more than a generation they will often refuse to cross the line from where a former fence was removed, until circumstances such as drought threaten their existence on their side of the fenceline. Attempts to reinstate old migrations may require animals to be nudged along in the direction where their ancestors used to move at the appropriate time of the year.

In addition to Lindsey’s third aspect, a few game farmers benefit further from their perimeter game fencing by installing funnel traps that allow one-way movement of game animals into their farms, at the expense of surrounding farmers who allow or encourage free movement of game animals.

6. BENEFITS OF PRIVATE PARKS AND RESERVES FOR BIODIVERSITY CONSERVATION

Private parks and reserves may contribute positively to biodiversity conservation by:

- Providing habitat and ecosystem functions.
- Housing wild animals.
- Allowing wild animals to migrate through.
- Re-introducing species of wild animals that had been eliminated or whose populations were no longer viable.
- Implementing preventative management activities such as rapidly reducing animal populations when the carrying capacity is exceeded, such as during droughts.
- Implementing restorative management activities such as erosion control to rehydrate rangeland and selective control of encroached bush.

Private parks and reserves are more likely to contribute to biodiversity conservation in the above ways if they:

- Are larger, to provide more space.
- Are not game fenced, to allow free movements of game animals.
- Adjoin other protected areas, to allow free movements of game animals.
- Are profitable, so that earnings may be reinvested into good management.
- Keep good records that assist in decision making for adaptive management.
- Are free of bureaucratic restrictions that may otherwise limit or delay prompt management.

Some examples appear below of activities carried out by private reserves that contribute to biodiversity conservation.

The **Namib Rand Nature Reserve** has not been registered as a private park or reserve. It is a not-for-profit organization that operates on 172,200 ha of former farmland (Jackson 2010).

The aims of the Namib Rand Nature Reserve are:

- To conserve for the benefit of future generations and to protect the sensitive and fragile environment and its rich biodiversity.
- To create a nature reserve with a healthy and functioning ecosystem, providing a sanctuary for flora and fauna and to facilitate seasonal migratory routes in partnership with neighbors.
- To promote sustainable utilization – through ecologically sustainable and high-quality level tourism products and other projects.
- To achieve a commercially viable operation to ensure continuance and financial independence.

The Namib Rand Nature Reserve's contributions to biodiversity conservation include the following:

- Removal of over 2,000 km of fencing.
- Re-introduction of giraffe and cheetah.
- Bolstering numbers of red hartebeest and plains zebra.
- Feeding lappet-faced vultures at its vulture restaurant.
- Setting aside of 15% of the reserve as a wilderness area.
- Limiting overnight visitors to an average of one bed per 1,000 ha and 20 beds per location.
- Conducting annual game counts, of which the results appear on the website www.namibrand.org
- Hosting researchers and intending to conduct research into former game migrations, with a view to reinstating them.
- Hosting the Namib Desert Environmental Education Trust (NaDEET), which aims to empower and educate Namibian schoolchildren for a sustainable future. Its website appears at: www.nadeet.org
- Implementation of an external lighting management plan to qualify as an international dark sky reserve that avoids

negative consequences of light pollution on biodiversity, such as interfering with animal navigation, reducing the hunting success of predators and preventing moths from pollinating plants.

- Implementation of a water management plan, including the monitoring of the impact of a water hole on the surrounding vegetation.
- Implementation of tourism and land use zonation plans.

Farms that make up the **Gondwana Collection** have not been registered as private reserves. Their contributions to biodiversity conservation include the following:

- Implementation of environmentally friendly measures at all accommodation facilities, such as to save and re-use water, reduce energy consumption and recycle wastes.
- Re-introduction of game species.
- Conducting annual game counts.
- Monitoring, such as by regular fixed point photographs, for use in management decisions.
- Temporary closing of at least half of the water points at any one time, to provide rest for the vegetation. Wind pumps were replaced with submersible solar powered pumps that can easily be moved from borehole to borehole, to facilitate temporary closing and opening of water points.
- Intention to bring Sanga cattle with herders to provide bulk grazing services after seasons of high rainfall in the Gondwana Kalahari Park.

Kambaku Lodge was built on the 8,000 ha farm Okaruiputa, which has not been registered as a private reserve but as a hunting farm. Its contributions to biodiversity conservation include the following:

- Hiring of a qualified wildlife manager from South Africa to draft a wildlife and rangeland management plan for the reserve.
- Further advice on wildlife and rangeland management was sought, resulting in the hosting of an Australian landscape ecologist who advised how to maintain landscape functionality.
- Labourers were hired to chop encroached bushes in strategic circular wide strips that could later act as firebreaks when applying prescribed burning to the circles of rangeland surrounded by the strips.
- A machine was imported for N\$170,000 to cut regenerating bushes and convert them into chips that are distributed back over the rangeland as mulch.
- Certain water points are temporarily closed, and salt licks are placed away from water points, so that game animals may move to other water points for long enough to allow palatable grasses and bushes to replenish food reserves around the closed water points.

Huab Safari Ranches was registered as a private nature reserve in 1996, occupying 8061 ha in the Kunene Region. According to the website www.namibian.org/travel/namibia/huab.html its contributions to biodiversity conservation include the following:

- The once severely over grazed farmland has been completely given over to wildlife and is gradually returning to pristine condition.
- Anti erosion measures consisting of half moon contours raised on the affected land to decrease the speed of flowing rain water as well as gabions and the filling of erosion channels are helping the scars to heal.
- In order to re-establish the natural balance of fauna, it is necessary to reintroduce indigenous animals such as giraffe, springbok and ostrich, as all these species succumbed to the guns. Others are now returning of their own account.
- As the vegetation is no longer over-utilised by excessive domestic stock, the wild animals are drawn to the better grazing and can drink in peace from waterholes which no longer have barbed wire fences around them. They have been made "game-friendly" with drinking saucers enabling good vision rather than the original walled cattle troughs.
- Encouraging natural combinations of animals that are mutually beneficial.
- Cleaning up rubbish that had been thrown away by people.

At least part of the 42,000 ha **Ohorongo Private Game Reserve** was registered in 1974. The ways whereby Ohorongo Private Game Reserve contributes towards biodiversity conservation include the following:

- Facilitation of wildlife movements inside the reserve, by removal of internal cattle fencing from previous cattle farms.
- Allowing elephants to drink at the seeps downstream from dams (although elephants damage the game fence to get in and out of the reserve)
- Frequent sale of captured game, which also controls populations within the reserve.
- Re-introduction of game species.

The fact that more information was available from unregistered private parks and reserves than from registered parks and reserves supports the previously mentioned opinion that the former contribute more to biodiversity conservation than the latter that had been based on relative sizes of areas covered. Private parks and reserves contribute greatly to biodiversity conservation by removal of fencing and this seems to have occurred particularly in many of the unregistered private reserves.

7. HARMFUL EFFECTS OF PRIVATE PARKS AND RESERVES FOR BIODIVERSITY CONSERVATION

Private parks and reserves may harm biodiversity conservation by:

- Experiencing a weakening in perennial grass cover.
- Experiencing the encroachment of bushes or alien invasive weeds.
- Experiencing soil erosion.
- Preventing wild animals from migrating or undertaking opportunistic movements.
- Re-introducing species of wild animals that are unable to learn to adapt to their new environment.
- Killing predators that threaten valuable game species.

Private parks and reserves are more likely to harm biodiversity conservation in the above ways if they:

- Are smaller, providing insufficient space.
- Are overstocked, especially with gregarious short-grass grazing species and especially at the start of recovery periods after drought.
- Are prevented from reducing game population sizes when the carrying capacity is exceeded, due to bureaucratic obstacles and delays in awaiting the outcome of permit applications.
- Provide supplementary feed instead of reducing populations when carrying capacity is exceeded.
- Are surrounded by game proof fencing that interferes with migrations and opportunistic movements.
- Are continuously grazed.
- Eliminate all fires.
- Eliminate cattle, while not being allowed to stock buffalo.
- Earn insufficient income for investing into management.
- Apply crisis management rather than preventative and adaptive management based on results of monitoring.
- Have a high density of vehicle tracks, such as for game viewing by tourists.
- Provide water points at key-lines in the landscape, where the slope changes from steep to gentle, or where water flow changes from concentrating to spreading.
- Fail to control erosion that dehydrates the landscape.

8. IMPLICATONS OF PRIVATE NATURE RESERVES AND PRIVATE GAME PARKS ON BIODIVERSITY CONSERVATION

In summary it must therefore be said that the legal restrictions which are imposed on the management of wildlife is the single biggest obstacle to conservation of biodiversity on privately held land, whether registered as private nature reserve or not, contributing to biodiversity management and improvement.

Taking into account both the benefits and the harmful effects of private nature reserves on biodiversity, the net effect of most private nature reserves is positive. For this positive balance to be increased, certain legislative restrictions such as the need for a game fence as well as the requirement for a hunting permit for each individual animal shot should be eased. In fact, sufficient powers should be devolved to the land owners, and to landscapes and conservancies which can plan and manage their biodiversity management on scales much larger than individual land holdings.

When this is implemented, the private conservation areas will be part of larger systems, and most of the negative effects listed in this chapter will be removed. Furthermore, the landowners will be able to apply adaptive management, which would change according to changing circumstances, and which may include a dual farming system with game and livestock, to derive the benefits of the different kind of grazers as discussed earlier in this chapter.

9. RECOMMENDATIONS FOR IMPROVED BIODIVERSITY CONSERVATION

In order to encourage improved biodiversity conservation on freehold land it is recommended that:

- MET devolves more rights over wild animals to farmers and conservancies so that they may gain from sustainable use of valuable animals, better manage the stocking rate and balance between different types of game animals, and better control conflict animals such as crop raiders and predators of livestock.
- MET explores the potential for reinstating important migrations for shared benefit of game and livestock farmers.
- In situations where migrations cannot be reinstated, MET encourages the movement of game animals within restricted rangelands to provide growing-season-long resting of grazed grasses, such as by rotational closing of water points and/or burning.
- MET discourages game fencing except for temporary housing of newly introduced game animals.
- MET disallows funnel trapping along perimeter game fencing.
- MET makes use of the records it gathers on private parks and reserves to aid decision making on adaptive management, together with other relevant monitoring data gathered by farmers, conservancies and citizen science websites.
- MET applies ecosystem viability analysis to guide decision making on parks and reserves.
- Veterinary restrictions be reviewed with a view to allowing re-introductions of buffaloes or mixing of game animals and cattle to provide bulk grazing services.
- MET allows cattle grazing in private parks and reserves to provide bulk grazing services, until such time that buffaloes may be re-introduced.
- MET lobbies internationally for removal of restrictions to trade in valuable game animals and their products.
- MET facilitates erosion control to maintain and restore key hydromorphic grasslands that contribute to habitat diversity and provide important buffering against droughts.

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CHAPTER 3

PRIVATE PROTECTED AREAS IN NAMIBIA: ECONOMICS, POLICY/INSTITUTIONAL ANALYSIS AND TOURISM ASPECTS

1. INTRODUCTION

This part of the overall study on Private Game Parks in Namibia explores economics, tourism and policy aspects of the phenomena. The first part sets the setting as per the basic data analysis as obtained from the MET Permit Office. Thereafter the economics of private game reserves are explored. The second part develops the economics ideas further by bringing in the element of the private game reserves contribution to the tourism sector as a whole. The final part explores policy implications of the phenomena treating aspects such as economic incentives and or state aid and involvement. It then offers recommendations.

2. SETTING THE SCENE

Based on the data as obtained from the MET's Permit Office, the following descriptive statistics are gleaned:

Table 1: Total Private Game Farms

Category	Number	%
Private Registered	139	89%
Local Authority	6	4%
Government and Local Authority	11	7%
Total	156	100%

Source: Analyst computations based on MET's Permit's data

The size as per land is thus captured below:

Table 2: Total Private Game Farms (Hectares criterion)

Category	Hectares	%
Private Registered	847 654	87.7%
Government	84 693.00	8.8%
Local Authority	34 620.00	3.6%
Total	966 967	100%

Source: Analyst computations based on MET's Permit's data

The data from the MET's Permit Office is however silent on a number of large and well known Private Game Reserves.²⁷ The following list provides such insights as to the PGRs that are not on official records:

²⁷ It appears that most of these were registered after Namibia's Independence-1990 onwards.

Table 3: Additional PGRs not recorded officially

Name of PGR	Size-Ha
Godwana Collection	197 000
Sandfontein Nature Game Reserve	76 000
Erindi Private Game Reserve	79 000
NamibRand Nature Reserve	172 200
Fischer's Pan Private Game Reserve	7 000
Onguma Private Game Reserve	36 000
Kulala Wilderness Reserves	37000
Gochenas Nature Reserve	6 000
Ongava Game Reserve	Unknown
Etosha Aoba Private Game Reserve	36 000
Okonjima Africat Foundation	20 000
Waterberg Nature Farm	42 000
Ameib Guest Farm	200 000

Source: Analyst desktop research

The implications are that PGRs are estimated between 831,000 hectares and 1,500,000 hectares. Using the data from the Permit Office, it can be inferred that between 1960-1990, PGRs grew at a rate of 27,000 hectares per annum. After 1990, it appears that the growth is a little faster coming in at around 40,000 hectares per annum.

3. EXPLORING THE ECONOMICS OF PGRS

3.1 Economic Analysis Vs Financial Analysis

This section aims to explore the economic viability of PGRs-i.e. make a profit and therefore constitute an appealing investment opportunity. Economic analysis attempts to measure the contribution of PGRs to national income, and is a different measure to from financial analysis. Financial and Economic analyses have different perspectives or points of view. Financial analysis involves examining the activities and resource flows of the main entities or stakeholders or groups of entities separately. It embraces all resource flows both in-cash and in-kind. Economic analysis involves examining the impact of these activities and resource flows on society (the economy) as a whole.

Financial Analysis calculates the **incentives** for the main stakeholders, checks the solvency and longer-term sustainability of the project, and helps to design possible cost recovery mechanisms. It prepares the ground for an economic analysis, which calculates **all the income** generated by the activity and the incremental change in this income. It consolidates the cash flows of all the stakeholders in society into a single cash flow. Economic Analysis also provides valuable information on the contribution of the project in the international context as well as domestic effects in the economy.

3.2 Economic Viability of PGRs

The current body of work on the economics of PGRs shows that as an alternative land use approach, PGRs are highly economically viable. The most detailed empirical work on the economics of PGRs is by Barnes and Humavindu, (2003) which examined then an 80,000 hectares private game reserve-the Godwana Canon Park, in Karas, Namibia. The work looked at the economics of alternative land use and their economic returns on commercial livestock production and small scale traditional livestock production as well as tourism. The results of the work, as inflated to 2006 prices shows that comparatively, the PGR model was ten times more valuable than the other alternative land use approaches.

Table 4: Comparative financial and economic values of three land uses at Godwana Canon Park (2001 data inflated to 2006 prices)

Item	Livestock Traditional	Livestock Commercial	Tourism
Financial Values*			
Initial capital investment per hectare (N\$)	33	56	271
Financial Turnover per hectare (N\$/annum)	4.71	15	165
Net profit per hectare (N\$/annum)	0.93	0.48	23
Financial rate of return over 10 years (FRR)	5.5%	9.8%	12.9%
Economic Values**			
Economic gross output per hectare (N\$/annum)	5.45	16	160
Gross national income per hectare (N\$/annum)	1.19	3.74	57
Net national income per hectare (N\$/annum)	0.10	2.3	46
Economic rate of return over ten years (ERR)	11.1%	23.1%	29.4%
Direct Employment created (full-time jobs)	24	29	153
In 2001-N\$1=US\$0.11			

Note: *Measured from the perspective of the landholder

** Measured from the perspective of society (contribution to national income)

Source: Barnes and Humavindu (2003)

The results above depict that there are comparative advantages in using tourism or a PGR model in areas such as the case study here, close to a main tourist sites, where scenery is of a high quality and where, as in the south, livestock production can be marginal.

Another study, not as detailed as the Barnes and Humavindu (2003) looked briefly at economic lessons learned from the NamibRand Nature Reserve.²⁸ The NamibRand PGR covers roughly 172,000 hectares and borders the Namib-Naukluft National Park in the west and the Nubib Mountains in the east. It was declared a PGR in 1993 and its first tourism concession was granted in 1994. Odendaal and Shaw (2010) show that through the generation of park fees, the PGR is self-sustaining, collecting in

28 Odendaal and Shaw (2010)

excess of N\$1.9 million in revenues by 2007. Roughly N\$1 million of that is used to cover operational expenditures, whilst capital expenditure accounts for another N\$500,000 of that. The surplus posted during the 2007 financial period is then diverted into a dedicated reserve fund to cover game re-introduction, land acquisition and satellite monitoring collars. The PGR's socioeconomic impact are also immense, before its formation, the 13 livestock farms comprising of the PGR used to employ around 40 people. Currently the PGR employs 150 people, mainly by tourism concessionaires.

3.3 Prototype PGR Economic Model

A prototype PGR cost-benefit model is thus developed that incorporates the typical features found in such systems. This is developed at 2008 prices and captures the following aspects:

Table 5: Key parameters used in base case models for the tourism wildlife viewing enterprises in the savannah biomes (2008)

Parameters	Commercial unit
Land used (hectares)	27,000
Game density	3.11
Core wildlife area	16,835
"Economic" carrying capacity (ha/LSU)	13
Hectares per tourist bed	218
No of lodges	3
Number of tourist beds	124
Occupancy rate (per annum)	63%
Average length of stay	4
Daily tariffs – Up-market Lodge (N\$)	3,000
Daily tariffs - Roadside Lodge (N\$)	1,300
Daily tariffs - Mid-market Lodge (N\$)	1,300
Daily tariffs - Camping (N\$)	n/a

The results of the model re-confirm the viability of the PGR system:

Table 6: Viability of the Prototype PGR system

Item	PGR
Financial Values*	
Initial capital investment per hectare (N\$)	1272.2
Financial Turnover per hectare (N\$/annum)	1705.5
Net profit per hectare (N\$/annum)	160.05
Financial rate of return over 10 years (FRR)	61.1%
Economic Values**	

Economic gross output per hectare (N\$/annum)	1593
Gross national income per hectare (N\$/annum)	426
Net national income per hectare (N\$/annum)	394.2
Economic rate of return over ten years (ERR)	28.1%
Direct Employment created (full-time jobs)	135

Source: Author's computations

Note: *Measured from the perspective of the landholder

** Measured from the perspective of society (contribution to national income)

Both the empirical work as detailed in subsection 3.2 and the prototype work in this work indicate the potential profitability of PGRs. Basically using eco-tourism as the economic strategy, the PGRs demonstrate their economic ability as a livelihood strategy capable to deliver both economic and ecological viability. It should be noted that economic benefits do not only accrue to landowners, but also to governments in the form of costs avoided as PGRs essentially augment public protected area systems-lands those governments might otherwise would had to purchase and protect.

3.4 PGR and Tourism Sector

The PGR model in Namibia depends extremely on tourism—especially on ecotourism and hunting for its financial and economic sustainability. Such sectorial concentration and dependence however poses an economic risk. Tourism is a risky sector and is highly vulnerable to wide economic fluctuations. In addition political unrest, natural disasters, terrorisms are factors that can drive fluctuations in the tourism market that also exposes the PGRs tenuous security and thereby underscoring the limits to private sector approach. Another shortcoming as a result of the sector concentration risk is that potential conflict of interest may arise between economics and ecology. As the PGR owners depend solely on ecotourism and hunting at times, some may be tempted to degrade natural resource rather than conserve them, thereby placing economic profits over rangeland protection. A clear major shortcoming in the Namibia PGR is also the fact that PGR is not mentioned or treated anywhere in current national documents focusing on tourism such as NDP4 and the national tourism policy. This then makes it very difficult for efficient PGR sector planning and strategy making within the broader tourism sector ambit.

The effect of private conservation areas on state run protected areas must discussed by analysing the relationship between private conservation areas and state run protected areas. For this discussion there are no available data from a survey, but we rely on accepted general knowledge, which is in our opinion undisputed. There are a number of state run protected areas which have such a strong brand name internationally, that they will always be the destinations of choice for tourists and tour operators for the purposes of game viewing and generally wildlife experience. These include the obvious ones such as the Etosha National Park and the Waterberg Plateau Park. The standards of privately owned hospitality establishments are however higher than those inside state run protected areas. Differently expressed, the value for money a tourist receives inside national parks is not as good as in private lodges surrounding the parks. This lead to the many lodges being built around Etosha, so that tourists can enter the park for day visits but stay in privately owned accommodation after a day's trip through the park or a section of the park. This also applies to tourists who stay for multiple days at a neighbouring lodge and visit the park every day.

This symbiotic relationship will continue to exist, even after the hospitality standards inside the park are comparable to those in the surrounding private lodges, simply because of tourism numbers, and because the hospitality facilities inside the park will take a few years to establish themselves fully in the tourism marketing industry. Travel agencies which work out tour routes for tourist stopped booking tourists in state run hospitality establishment because these don't pay booking commissions to the travel agencies like all other accommodation establishments do. Therefore the effect of private conservation areas on state run protected areas does not flow from the management of fauna or flora in the private conservation areas but from the different standards of the hospitality establishments in the private conservation areas.

Another aspect which must be considered in the relationship between state run and private conservation areas is that private conservation areas have the maximisation of profit as one of their major aims, whereas for state run protected areas the mandate to make wildlife and nature accessible to a large part of the Namibian population is one that grows in importance. For this reason, mere entry into state run protected areas will presumably always be charged at a very affordable rate, whereas private conservation areas can (and partly do) price themselves so high, that ordinary Namibians cannot visit them.

The pricing structure of Namibia as a tourist destination is such that Namibia is losing competitiveness against other international destinations. This became especially clear this year, when the effects of the economic turmoil in Europe were felt by local stakeholders in the tourism industry. Should this trend continue, then the relationship between state run protected areas and private stakeholders in the tourism sector, not just private conservation areas, will have to be strengthened further, to assure continued competitiveness of Namibia as a tourist destination.

CHAPTER 4

ECONOMIC INCENTIVES FOR PGRS

Economic incentives to promote PGRs are currently non-existent in Namibia. This situation is not only peculiar to Namibia, but across the world the same situation persists. Economic incentives for PGRs are normally property tax exemptions, payment for environmental services and tax exemption for NGO managed PGRs.

Table 7: Common Economic Incentives for PGRs

Economic Incentives	Definition	Namibian status	Comment
Property tax exemption	The PGR is exempted from paying property levy/taxes	Non-existent	PGRs in Namibia are still classified as agricultural land and thus pay Land Tax
Payment for Environmental Services	Government will pay cash amounts to PGRs per hectare as an incentive to continue conserving the land	Non-existent	Costa Rica is currently the only country in the world that offers this option for PGRs.
NGO tax exemption if PGR is run by them	Tax exemption for lands held by non-profit foundations or similar organizations.	Non-existent	Costa Rica is currently the only country in the world that offers this option for PGRs.

Economic incentives as per the global experience also appear to be tenuous. Property tax exemptions, for example would exist in a few countries, but albeit very modest and only to be withdrawn in times of financial crisis. Costa Rica though, has been the only country consistent in its approach to utilise economic incentives for its PGRs system through mainly property tax exemption and payment for environmental services. Also given the precarious national budgets of developing countries with so many competing demands on them, not many will offer significant economic incentives for PGRs.

Overall, the most successful economic incentive program has been Costa Rica’s program involving payments for environmental services, which now covers roughly 220,652 hectares. Through this programme the government makes cash payments of roughly US\$50 per hectare to private landowners to conserve or sustainably manage their properties. Priority is given to owners of lands within national park boundaries and to those who have formally established private protected areas. Although this program has been highly successful in attracting the interest of private landowners, not all eligible landowners receive payments, and the contracts are limited to a term of five years, after which all landowners must renew their solicitation. A more viable strategy would entail having potential incentives being linked to the drivers of the differences between economic and financial viability. This is more so important as the country’s PGRs would differ due to various biophysical and economic factors. The question then would be, based on cost-benefit analysis, what are the main reasons for the differences, if there are any. If there are important differences, then there is no need for special incentives. If the main difference is for example, that the economic cost of labour is lower than the financial cost, then a special tax break for labour comes closest to aligning financial and economic incentives correctly. Property tax breaks (for instance) risks creating on-paper-only PGRs where people could pretend to set up game farms to get the tax break, but in the presence of very little monitoring will continue with regular farming or alternative land use in practice.

CHAPTER 5

PGR' STRENGTH, WEAKNESS, OPPORTUNITIES AND THREATS (SWOT)

As an approach to conservation, PGRs do offer advantages and disadvantages. We explore the PGR's SWOT to summarise the general Namibian patterns that are emerging. This would then provide the necessary roadmap to proffer some recommendations in the next section.

Table 8: PGR SWOT Analysis

Strengths	Weaknesses
<p>Profitable and economically viable Instrument for biodiversity protection Intrinsically linked to Namibia's fastest growing economic sector-tourism Collaborative nature reserves increase reserve sizes Some PGRs adjacent to national parks offering PPP collaboration</p>	<p>Little national oversight and research Single sector risk (tourism) Little outreach to empowerment (economic) Tenuous land security status (ecological and economics) Absent industry association Suboptimal size to protect mega fauna-especially where No targeted economic incentives for the sector No specific financing instruments for the sector by the financial markets Land is still classified as agricultural land, pays land tax.</p>
Opportunities	Threats
<p>Leveraging partnerships with public sector Product development – niche areas other than ecotourism Can serve as alternative model for land resettlement-increase menu of options on how to resettle Namibians. Tourism a key sector in NDP4 Economic incentives through tourism policies Funding options through the EIF and national development finance institutions. Develop closer linkages to adjacent communities-i.e. infrastructure support and employment creation. Mainstreaming PGR concept in forthcoming policies and bills.</p>	<p>Land reform and other competing land uses Macro-economic situation Exchange rates fluctuations Natural disasters (climate change) Public perception-'elite's islands'</p>

The following recommendations are made in regard to developing further the PGR system in Namibia:

6.1 Develop a comprehensive database on PGRs in Namibia

Of outmost importance is the need to develop a comprehensive database on PGRs in Namibia by the MET and its partners. The data on PGRs is outdated and not centralised. The database work would also need to collaborate with the Namibian Deeds Office to trace all transactions pertaining to the PGRs in the MET's database. Based on this work's disaggregation of PGRs, efforts should be directed also at the current status of government owned PGRs. This process should be expected to take at least three to six months.

6.2 Develop a clear road map on PGRs

Once a database is in place, a clear roadmap for the PGRs industry must be drawn up between the MET and identified PGRs. Given the PGR industry high dependence on the tourism industry, the roadmap must seek to mainstream the sector in all relevant policy and support instruments of tourism.

6.3 Increase Institutional Capacity and Financial Support for Institutions that Oversees PGRs

Increased capacity needs to build in the private and public actors involved in conserving private lands, and support directed to them. In the public sector, governments need to develop capacity to authorize and monitor formal private conservation lands, and need to better integrate private lands conservation actions into their overall conservation strategies. In the private sector, conservation NGOs need greater support and capacity to fulfil their leadership role in developing private lands conservation tools, identifying private lands conservation opportunities, establishing and maintaining private conservation areas, and providing technical assistance to conservation-minded landowners.

6.4 Further Economic Research Needed

The Namibian PGR landscape would benefit immensely from further economic analyses into the sector. Such analysis could look at identifying additional factors influencing reserve size, exploring further the financial and economic profitability of private parks, and documenting non-market values. This would include determining the extent to which bequest value is realized over time (i.e. reserve ownership passes to future generations). Other topics would include quantifying the costs and benefits of private parks at both the local and national levels, comparing nature reserve owners' behaviour to that of private landowners in general, determining net gains and losses from various incentives programs for private lands, and exploring the extent to which private parks may be complementary or substitute goods for state protected areas.

6.5 Establish Economic Incentives for PGRs

To the extent that it is economically feasible, an attempt should be made at developing economic incentives for private individuals, NGOs, and communities to adopt private lands conservation practices. These should be pervasive in assessing all instruments possible. The utilisation of the Namibian Environmental Investment Fund should be explored to provide funding to PGRs. Other incentives would include qualification for government financial or technical assistance in monitoring and managing lands for conservation.

6.6 Industry Raising Profile

The Namibian PGR Industry needs to form an association body to drive the industry's interest and pertinent issues such as land reform and also to ensure that their lobbying efforts are optimised. The current absence of such an association does not auger well for the sector's needs to be appreciated and addressed at national policy fora.

6.7 Explore Public Private Collaborations

Once a roadmap is designed, there would be a need to fully explore the potential to coordinate optimization of the PGR model in Namibia. Collaboration is especially important to conserve ecosystems not represented in the public protected areas, and help support public protected areas by protecting buffer zones and conservation corridors. A conservation strategy that coordinates and integrates public and private efforts can also seek to assure that private efforts focus on areas of priority for biodiversity conservation or sustainable use. Effective partnerships can use the respective capabilities of the public and private sectors to maximize the effectiveness of land conservation programs, as well as develop financial resources through international and national sources.

6.8 Mainstream PGR model as an alternative land use option for Namibia

The economics of PGR driven tourism enterprise shows that it is economically viable and financially sustainable. It could thus serve as an additional option in the land reform and resettlement programme of Namibia. PGR could then be used as an alternative economic strategy to resettle Namibians and thereby increases the menu of resettlement options from livestock and crop farming only. The publicly owned PGRs could be one avenue to start with. In general the PGR model as a resettlement option would then enable government to purchase the land that is quite marginal in terms of livestock and crop farming, but that has vast tourism potential and resettle communities. Caution would call to ensure that such an approach is accompanied by intensive skill programmes to ensure that the beneficiaries are able to adapt to the new environments.

CHAPTER 7

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