A QUESTIONNAIRE -BASED ASSESSMENT OF THE SOCIO-ECONOMIC SIGNIFICANCE OF ECO-TOURISM-BASED PRIVATE GAME RESERVES IN THE EASTERN CAPE

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1. EXECUTIVE SUMMARY

- The socio-economic profile of seven private game reserves (PGRs) was established, using a self-filled in questionnaire, in order to assess their contribution to economy of the Eastern Cape region. The variation in data provision, property size, investment and duration of operation of the PGRs precluded an analysis of all aspects of the data. The findings are however of considerable value and are summarised here.
- The top three attractions to the PGRs included (1) the game, (2) the scenery and landscapes and (3) the accommodation and high quality service. The "Big 5", as well as certain extra-limital species, such as giraffe and white rhinoceros, are considered to be drawcard species.
- The PGR industry targets the foreign market and upper income groups, and overnight tourist numbers appear to be on the increase.
- The initial capital outlay for establishing a PGR is extremely costly, ranging from R10 million to R60 million, with land purchases being the dominant component, followed by the cost of buildings.
- The seven PGRs have increased on-site employment opportunities by 3.5 times, the average wage bill increased by 20 times and average wages by 5.7 times. No farm workers were laid off as a consequence of the switch from farming to game-based ecotourism. Staff received additional employment benefits not typically available to farm labourers, including extensive skills training.
- Total gross incomes were estimated to be in the region of R1985/ha per year, suggesting that PGRs may contribute in excess of R87 million to the economy of the region per annum.
- The establishment of these PGRs has brought about a considerably expanded conservation estate in the Eastern Cape, with apparent benefits in terms of biodiversity conservation. The costs of extra-limital species to biodiversity conservation is not known.
- Constraints to PGR establishment included the lack of government and legislative support, a lack of information, the costs of the transition and the costs of marketing the operations.
- This survey has shown that PGRs provide a highly desirable land-use option in relation to traditional land uses in this area. It is likely that the multiplier effects of this economic activity are also much higher, but data to assess this situation are lacking.
- A number of recommendations are presented, including the need to assess the full economic impacts of the industry, regularly updating these socio-economic surveys, auditing the contribution of the PGRs to biodiversity conservation, assessing the costs of extra-limital wildlife species and making these findings available to stakeholders and policymakers.

2. INTRODUCTION

During the past 30 years, the wildlife industry has developed into a multi-million Rand industry (Van der Waal & Dekker 1998) and has become a major earner of foreign currency with positive benefits for employment creation, eco-tourism and biodiversity (Eloff 1996). During 2000 a peak was reached in the Eastern Cape when a 48% increase in the number of private land-owners entering the commercial game industry was recorded (Jolliffe 2001). While the majority of game-based operations within the province focus on hunting and game sales (Smith & Wilson 2002), it is the eco-tourism-based private game reserves (PGRs) that appear to be the greater income earners.

Based on the findings of a recent report, PGRs aimed at the upper income groups can generate almost R2 000/ha (Sims-Castley 2002), suggesting that despite the relatively small number of eco-tourism-based game farms in the Eastern Cape, their combined earning power, coupled with multiplier effects and other documented benefits of eco-tourism (i.e. job creation, equitable wealth distribution, community upliftment, sustainable land use, biodiversity conservation, etc (Geach 1995)), probably have a significant economic impact on the region. In spite of this, eco-tourism is generally ignored in economic analyses, with few attempts to quantify the value of the industry in either financial or economic terms (Antrobus *et al.* 1994). Consequently, the economic contribution made by the private game reserves whose core business is eco-tourism may not be fully appreciated, with the result that the opportunities offered by this expanding industry, particularly in the Eastern Cape, are overlooked in regional development planning.

Therefore, the purpose of the study is to gain some insight into the socio-economic significance of private game reserves in the Eastern Cape with particular emphasis on eco-tourism. The report also attempts to identify important issues relating to the growth of this industry in the Eastern Cape.

3. METHODOLOGICAL APPROACH

A standard questionnaire was circulated to the seven private game reserves[1] (PGRs) who are all full members of Indalo. The questionnaire was divided into five sections dealing with: establishment of the reserve; tourism-related activities; employment; conservation issues; and policy issues. A series of open-ended questions were designed to capture economic benefits in terms of revenue generation, creation of (local) employment, social upliftment, empowerment of local communities and increased entrepreneurial opportunities. The survey was undertaken in winter 2003, and hence the findings refer to that time. It is expected that these circumstances will change relatively rapidly as the PGRs are further developed.

[1] : In the current report, all respondents are referred to as private game reserves even though ownership types and legal status may differ. They all derive their earnings solely from game-based ecotourism ventures.

4. SURVEY RESULTS

4.1 BACKGROUND

All seven PGRs use game-based ecotourism as their sole means of business (no mixed farming *sensu* Smith & Wilson 2002). They range in size from 1 600 ha to 26 932 ha (average size of 12 338 ha). Four out of seven of the PGRs are over 15 000 ha in size. The remaining three PGRs are either 5 000 ha or less. As a result, this report distinguishes between large PGRs (>15 000 ha) and small PGRs (<5 000ha).

Apart from the above-mentioned size distinction, two other factors make it impossible to compare across PGRs in terms of their costs and revenues. First, the various PGRs have been operating for different periods of time ranging from two to thirteen years and are all at different stages of development. Two are still in a developmental phase, one of which has been under development for two years and the other for seven years. Neither are earning revenue yet. This is an important feature of the survey in that it highlights the different cost and revenue profiles associated with these different phases and how these profiles change with time.

Another important difference between the participating PGRs is their management focus, defined in terms of land-use intensity. For example, the smaller PGRs (< 5 000 ha) provide a safari-type experience with less emphasis on wilderness experience and more on hospitality services, whereas the larger PGRs are more capable of providing a true wilderness experience.

Ownership of the PGRs is mainly in the form of registered companies with multiple shareholders. In some instances, individual landowners have formed cooperative partnerships with their neighbours. In one example, the registered management company leases the land from the landowners who receive a shareholding in proportion to their land contribution. One of the landowners is a local community whose land comprises 54% of the total reserve area, effectively making them the majority shareholder.

Previous land-uses on the PGRs included livestock farming (beef, dairy), small stock farming (sheep, angora goats) or a combination, with some intensive ostrich farming. Cultivation was low-key with only a minimal amount on a few properties.

While high earnings were the principle motivator behind the initiation of these reserves, money was not the only reason for pursuing this line of business. All of the survey participants indicated a desire to preserve the natural landscape of South Africa and to contribute towards conserving its biodiversity. Ecotourism, as opposed to agriculture, was seen as an activity more likely to achieve economical and ecological sustainability in the long run, with greater benefits for the local communities in terms of employment, empowerment and general upliftment.

4.2 DESCRIPTION OF THE ECO-TOURISM PRODUCT

When asked what aspects of the reserve attracted visitors, respondents unanimously agreed on three factors: (1) the game, (2) the scenery and landscape and (3) the high quality accommodation and service. Although other factors, such as proximity of the reserve to an airport; the reserve's malaria-free location; neighbouring communities;

and safe hiking were mentioned, their initial response clearly indicates that the essential resources on which the industry depends is the wildlife they support and the environment (both natural and built) in which their clients enjoy their 'unique African experience'.

The game

While only one or two reserves offered other activities such as hiking, hunting, live game sales and river cruising and canoeing (where a river was available), game viewing was an activity offered by all the PGRs. It is well documented that tourists only appreciate a small proportion of vertebrate biodiversity, favouring the so-called charismatic megafauna exemplified by the "Big 5", namely elephant, rhinoceros, lion, leopard and buffalo (Kerley *et al*. 2003). As a result, these species are used as a major drawcard by the tourism market (Western 1992, Goodwin & Leader-Williams 2000). Not surprisingly, of the four PGRs that could respond to this section of the questionnaire, the two larger reserves stocked the entire suite of "Big 5" species (it is implicitly assumed that leopard are present on all of the properties, although this needs to be tested). The remaining two PGRs, being less than 5 000 ha, did not stock the land-hungry species such as elephant, and lion, but did stock buffalo and rhinoceros (both white and black).

Another species common to all the PGRs was giraffe, probably because it is an animal that foreign tourists tend to associate with their perception of Africa and because of its striking visibility in the landscape. However, giraffe, along with white rhinoceros, are extra-limital species – indigenous to southern Africa but out of their natural range in the Eastern Cape. In order to maximise the viewing diversity and thereby optimise the eco-tourism potential of their property, many private reserves stock non-native species. However, the stocking of extra-limital species is a contentious issue in terms of biodiversity conservation because of its potentially detrimental impact on the ecosystem (Castley *et al.* 2001). It is worth noting that only one PGR reported a policy of stocking only indigenous and appropriate (in terms of available areas and habitats) wildlife species, while some PGRs that had no such policy are moving towards this goal. It appears that stocking extra-limital species may therefore bear a significant cost to these PGRs in the long-term.

Research has shown that introductions of giraffe to thicket have resulted in altered forms of certain tree species, namely *Schotia* sp. and *Sideroxylon inerme*. Browsing by herbivores constitute an important process for the long term maintenance of this vegetation type (Kerley *et al*. 1995), implying that such alterations by exotic browsers could negatively affect the correct functioning of this ecosystem. In KwazuluNatal recent research has shown a significant correlation between declines in bushbuck numbers and nyala introductions (Coates 2004).

The natural landscape

An important component of an African safari is being in the bush and experiencing the wilderness. Survey results clearly showed that landscape diversity and scenery were valuable commodities for the PGRs in this regard. Important natural features listed by the respondents included dunefields, beaches, rivers, open plains and mountains. The surveyed PGRs further indicated that another essential ingredient to achieving the wilderness state is to minimise man's intrusion on the landscape. This requires the relative absence of man-made structures such as buildings, telephone

lines, electricity pylons, etc. To this end the PGRs have already invested significant resources on rehabilitation and the improvement of aesthetic value (e.g. burying of power lines) (see Section 4.3.1).

Tourist accomodation
Types of accommodation on offer by the PGRs include lodges, guesthouses, chalets, suites and, in one case, a wagon camp. Reflecting the luxury nature of the tourist package, tariffs per person per night (p.p.p.n.) range from R1 200 to R3 750 p.p.p.n. for the lodges and R475 to R2 000 p.p.p.n. for the guesthouses. Hence, the PGRs' marketing tends to be targeted at the foreign market and at upper income groups. As a result, the majority of visitors to the PGRs (60 – 90%) come from Europe, including the UK. Between 2% and 15% originate from other foreign countries, including the USA. Less than 20% come from South Africa.

In spite of the apparently lofty prices, overnight tourist numbers to these exclusive reserves appear to be on the increase (FIGURE 1). The data series are of too short a duration to reliably model these trends, but the growth in visitor numbers is obvious. These figures agree with earlier figures for increases in visitor numbers to the nearby Addo Elephant National Park (Kerley & Boshoff 1997). All PGRs have forecast an increase in tourist numbers in the forthcoming year.

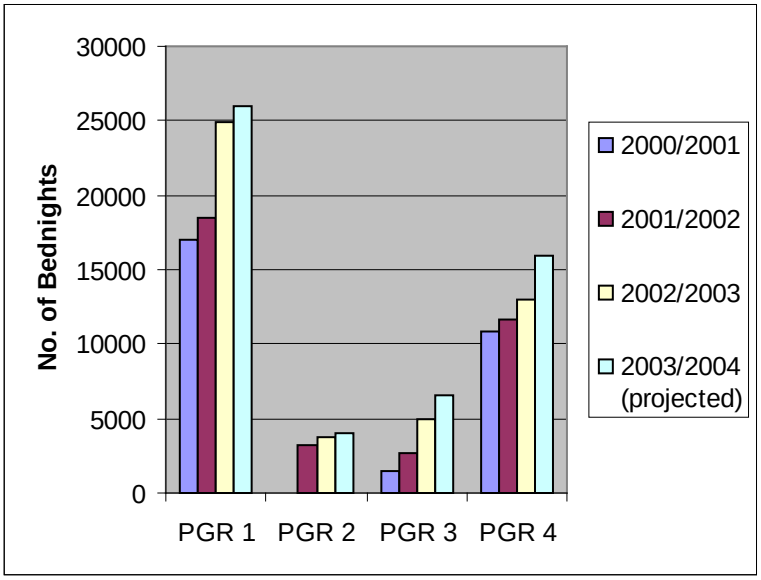

FIGURE 1: Trends in overnight tourist numbers (expressed as number of bednights) utilizing four private game reserves (PGRs) that were able to provide these data.

Plans for next 5 years
The stated priorities for the PGRs for the next 5 years are to enlarge the properties, to increase the number of beds, increase occupancy and to improve standards and thereby charge a higher rate, to introduce large mammals such as the "Big 5", wild dogs, and cheetah. For some PGRs, the stated intention is to limit extralimital species, excluding giraffe and white rhinoceros. Research and rehabilitation is also recognised as a priority for the PGRs. In the case of the developing PGRs, their priorities are to market and to open their lodges and establish wildlife on their properties for gameviewing.

4.3 ECONOMIC APPRAISAL

4.3.1 Capital costs

Survey results indicate that setting up a PGR is a costly undertaking, requiring an **initial outlay of anywhere from R10 million to as much as R60 million (on average R35 million).** Primary expenditures associated with establishing a PGR include: land, construction and renovation of buildings, interior décor, game, infrastructure, equipment and rehabilitation (FIGURE 2). The proportion of total expenditure each PGR spent on each cost category depended on numerous factors, including management focus, nature of ownership and size of property.

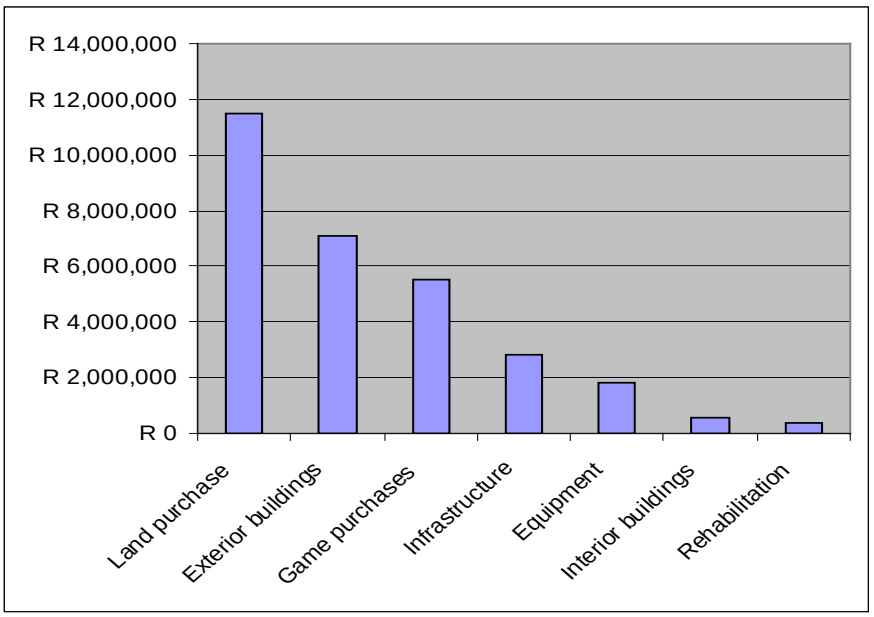

FIGURE 2: Mean costs associated with establishing a PGR, reflecting data from six such operations.

Land

In 67% of cases, land purchase constituted the highest proportion of total expenditure, although this proportion was highly variable across PGRs, ranging from 37.4% to 81.6%. In only one instance did land purchase not make up the biggest fraction of establishment costs, constituting only 14.6% of the total money spent. In another isolated case, no land was purchased due to the fact that the PGR was created as an amalgamation of neighbouring farms by existing landowners.

While the *proportion* of development costs spent on land was independent of the size of the property, the *actual amount* spent was directly related to the reserve size, ranging from R5 million in the case of the smallest PGR to R30 million for the largest (for the PGRs that provided these data). Per hectare **land purchases cost between R972 – R1 653 (on average R1 175)** with an outlying maximum of R3 125.

Buildings

The construction of new structures and renovation of existing buildings cost on average R9 million (R3 million – R20 million). However, this average is heavily skewed due to the highest case being an outlier. In the majority of cases, **building expenses were in the region of R3.5 million (R3 million – R4 million).**

On average **R850 000 (R400 000 – R1.5 million) was spent on interior décor** (furniture, interior design, etc), proportionally one of the lower expenses on the PGRs' budgets (1 – 8%).

Game
Owing to the extirpation of a majority of native species through hunting and habitat transformation, many PGRs' rely for their economic viability on the re-introduction of large herbivores, as well as the introduction of extra-limital species (Castley *et al*. 2001). It is therefore unsurprising that game was also an important expenditure item, costing between R750 000 and R13.8 million. However, the distribution of this expenditure across the PGRs surveyed is bimodal, conforming to the two size classes of PGR mentioned earlier. Magnitude spent is either around **R1.9 million (R750 000 – R4 million)** for PGRs less than 5 000 ha or **R12.9 million (R12 million – R13.8 million)** where PGRs are greater than 15 000 ha. Insufficient information was provided to determine whether the greater expense of the latter group was due to the larger PGRs having to buy more animals to stock the larger area or whether more expensive species were bought (i.e. charismatic species such as elephant, rhino or lion).

Infrastructure
Spendings on infrastructure, including roads, waterholes and fencing, ranged from R800 000 to R11.1 million (R2.8 million on average). Again the average is an overestimate due to an outlying maximum. The majority of PGRs spent in the region of **R1.5 million (R800 000 – R3.2 million)** on this category.

Equipment
The cost of equipment, including items such as game viewing vehicles, was quite variable between PGRs ranging from **R550 000 to R3.2 million (on average R1.8 million)**. However, this variability might be an artefact of how each PGR interpreted what they consider equipment to be.

Rehabilitation
While not a capital item *per se*, rehabilitation could be viewed as an investment into the natural capital of the PGRs and is a significant expenditure item. PGRs spent between R50 000 and R1 million (on average R390 000) on the removal of fences and other man-made structures, the burial of power lines, removal of alien vegetation and rehabilitation of heavily eroded areas.

4.3.2 Employment and wages
For most of the PGRs, strict human resource and procurement policies are in place to employ previous farm workers and to recruit staff from the local community, with a long-term objective to implement skills development and employment equity plans. Due to a lack of hospitality-related skills, as well as a lack of conservation and work ethics of these farm workers, substantial in-house training is required. Training may take as long as 18 months to 5 years. Skills required on the PGRs include an ability to speak English, numeracy, literacy, hospitality skills, game ranging, security, anti-poaching, chef skills and public relations. Apart from a lack of basic and specific skills, other problems associated with recruiting from the local community include alcohol abuse and unreliability in reporting for work.

In changing from farming to game-based ecotourism **employment numbers increased by a factor of 3.5**. Previously 175 people were employed on the farms before they were converted to PGRs. This number increased to 623 when eco-tourism was adopted as the form of land-use. The number of seasonal or part-time workers increased from 5 to 13, while those employed on a contract basis increased from 0 to 124. This comes to a grand total of 760 across seven PGRs (108.6 employees per PGR or 0.88 employees per km^2). **No farm workers were laid off in the establishment of the PGRs**. They were either employed by the PGR (50.9%) or moved with their original employer (45.1%). The remainder either went on pension or passed away.

The average wage bill increased from R160 367 to R3.2 million per annum (increased by a factor of 20). This equates to an **average annual salary** of R31 263 per employee, a **5.7 fold increase** from R5 498 p.a. **Additional benefits such as accommodation, food and training have also seen a substantial improvement.** Previously accommodation was recorded as being spartan with very limited amenities i.e. no hot water, no modern toilets, no ceilings, no lighting or electricity. On the PGRs workers are provided with modern amenities including electricity, hot and cold running water, water-borne sewage, ceilings, tiled floors and, in some instances, gardens. In more than half the reserves, staff are provided with cooked meals. Further benefits include UIF (unemployment insurance), pension, group life insurance, medical aid, uniforms, transport to school and crèche for the children of staff. In a small number of cases, grazing, 14^{th} cheque and subscription fees are also provided.

On all PGRs skills training is a priority. Most training is in-house and covers a wide range of skills, including hotel skills, first aid, management skills, game capture and driving licences. Where staff are hired locally and where the previous farm workers were kept on, training is often also required in English, general literacy and numeracy.

Work which requires technical expertise and therefore necessitates it to be outsourced to outside contractors includes game fencing, electric fencing, internal fence removal, general clean up, security, bush and alien plant control, game capture and building construction. On average **R1.1 million is outsourced per annum overall (R120 000 – R2.6 million).**

4.3.3 Revenues

The inclusion of two PGRs that are still in a development phase, one of which has been under development for 7 years since 1997, and are not yet operational, highlights the lengthy and extremely costly development period involved in setting up a typical PGR, prior to any revenues being earned.

One would therefore expect biodiversity-based ventures of this nature to be a highly lucrative enterprise capable of recouping the costs, with interest. Not surprisingly, survey results clearly illustrated the high earning potential of the PGRs.

Once again, it is not possible to compare across PGRs due to the different development phases and management focuses of the reserves. For example some reserves have only just started in the last couple of years whereas others have been established and operating for more than 4 years. Furthermore, their capacity to earn

revenue also differs (i.e. different facilities, number of beds, tariffs charged per bed, etc). But to give some indication of earning in the 2002/2003 financial year, **total gross incomes (TGI) generated by 3 of the surveyed PGRs amounted to R21.9 million.** Per PGR this ranged between R1.5 million and R12.5 million **(average R7.3 million[2] per PGR).** This equates to an **average of R1 985 per hectare (R300 to R4 875 per hectare).** Because income earned is dependent on number of beds and tariffs charged per bed, and is not dependent on property size, larger PGRs will tend to reflect a lower income per hectare than smaller ones

In a recent study looking at changing land use trends in the thicket biome, Smith & Wilson (2002) identified 12 PGRs operating only non-consumptive eco-tourism activities within the region. Using the average gross income per PGR calculated above, it is estimated that **a minimum TGI of R87.2 million was earned by eco-tourism-based PGRs in the region**. This implies that PGRs have the potential to significantly expand the contribution of eco-tourism to the regional economy. However, care must be taken in extrapolating the economic contribution of the current PGRs to the rest of the region's potential reserves as the value of these reserves will depend on a host of factors, including the nature of eco-tourism developments and the size of the eco-tourism market.

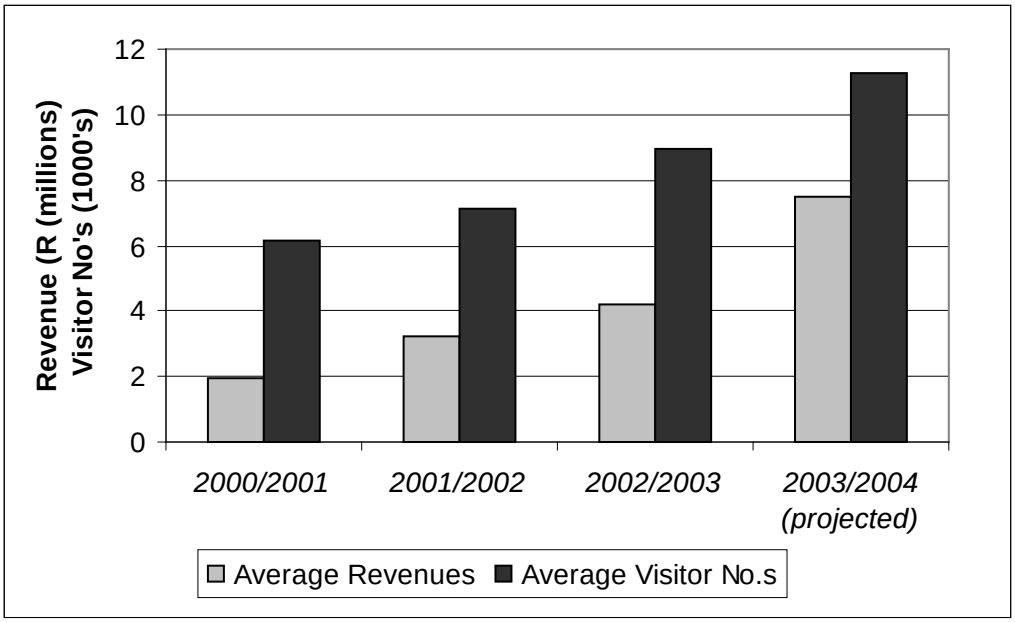

FIGURE 3: Trends in total gross incomes compared with trends in tourist numbers over time for two PGRs that provided these data for the past three years.

All PGRs show an increase in gross annual income over time (FIGURE 3). This could be due to PGRs providing more beds, however the rate of increase in revenue is greater than the rate of increase in overnight tourist numbers (i.e. occupied beds) (FIGURE 3), suggesting that there are additional reasons for this increase. Other

[2] One of the larger PGRs did not provide income and expenditure information. Due to the fact that this PGR had the most number of beds of all the PGRs surveyed and also charged the highest tariffs, it is likely that the calculated averages are lower than would otherwise have been if these data had been included.

reasons might include increases in tariffs or marketing. The data are not available to give a decisive explanation of these trends.

The rate of increase of TGI varies from 10% to 150% per annum. Whether a ceiling exists where this rate of increase flattens out can only be determined once more data are collected after an appropriate amount of time has passed (at least 4 – 5 years). All PGRs anticipated an increase of 28% to 73% in expected earnings in the forthcoming financial year, resulting in gross revenues ranging from R2 million to R13.5 million.

4.4 CONSERVATION ISSUES

Altogether the PGRs surveyed encompass areas of six of South Africa's seven biomes, namely the grassland, nama karoo, thicket, savanna, forest and fynbos biomes. The only biome not included within any of these properties is the succulent karoo, but it is not clear whether this exclusion of this biome is due to ecological or economical reasons or chance (given the small sample size of PGRs). On average 44 species of mammals, 210 species of bird, 29 species of reptile, 54 species of trees, 78 species of plants and 21 species of grasses have been recorded on the PGRs, although it is not clear whether these data have been collected in a systematic fashion. The potential of PGRs for biodiversity conservation is therefore substantial, but needs to be more rigorously quantified.

Given that the natural landscape is the single most important resource to the PGRs (see Section 4.2), it is not surprising that conservation is a concern for all the respondents. It provides both the resource base to support wildlife, as well as the scenery backdrop to provide a wilderness experience, both of which attract tourists.

Key aspects of their conservation plans

It appears that the main vision of all the PGRs is the long-term ecological, financial and social sustainability of the reserve. Thus the protection and management of the natural resources for their long-term conservation and utilization is stated as a high priority. According to the PGRs, this would involve, amongst other things, protection of the natural biodiversity, elimination of exotic and extra-limital fauna and flora (for some PGRs), and the rehabilitation and restoration of overgrazed and degraded areas to return them to their natural state. Social upliftment and protection of cultural, historical, archeological and palaeontological features are also considered by the PGRs to be essential to achieve this goal.

Conservation issues and actions

Carrying capacities and stocking rates for grazers and browsers, as well as predator-prey ratios are considered essential for the effective management of the PGRs. The management of future predator and elephant populations are a concern and ethical solutions are being explored by the PGRs to control the population sizes of these and other species.

While poaching is largely restricted to small snares using wire nooses, the majority of PGRs have taken the potential threat of poaching seriously and have anti-poaching units monitoring both the boundaries and the gates. On the whole 'problem' animals such as jackal and leopard have been largely contained by good game-proof fencing and have caused a minimum of disturbance for neighbouring farmers according to the respondents.

All PGRs have active programs to remove and eliminate alien invasive vegetation such as prickly pear, jointed cactus, blue gums, lantana, agaves and exotic acacias. Soil erosion is an issue on previously transformed and degraded land. Long-term rehabilitation of these eroded areas is in progress. In cases where vegetation has prevented erosion, roads still present an erosion hazard and therefore the prevention of soil erosion is a high conservation priority for most PGRs.

Most PGRs have access to water, although future availability of water is a concern. Water is accessed from dams, water holes, bore holes and natural vleis. Water is also piped from the Great Fish River, Kariega River and Alicedale dam. Borehole water is often brackish and is therefore monitored frequently for quality.

4.5 CONSTRAINTS TO PGR ESTABLISHMENT

The most difficult aspects of reserve establishment were stated to be government regulations and bureaucracy that slowed the process down, especially with regards to obtaining building permission and proclamation as a private reserve (as defined by legislation). Land negotiations and purchase also posed difficulties to the establishment of the PGRs. In the case of multi-member consortia, formulating a constitution to suit all members of the consortium was complex. Furthermore, coping with the cost implications of a change in land-use, especially when some members carry historical debt over from domestic farming, was a constraint. The physical task of removing old fences and infrastructure on the PGRs presented problems too. Finally, convincing international tourists that the Eastern Cape offers a high quality game viewing experience is challenging.

For all PGRs, the easiest aspect of reserve establishment was the acquisition and introduction of game to the reserve, although the wisdom with which this was done is questionable, given the preponderance of extra-limital species stocked on some PGRs. This has now led to the need to remove some of these species. Stocking was further aided by the fact that some game species were already present on the properties.

Concerns with respect to medium- to long-term sustainability of the reserve

Because tourism sustains these reserves, their well-being is easily affected by global and local events, disasters and politics that might affect tourist numbers visiting South Africa. South Africa's political climate and stability is of particular concern to the PGRs.

Another obstacle identified by respondents as threatening long-term development and success of PGRs was the maintenance of good relations amongst owners in a relatively complex conservancy structure. In addition, difficulties experienced with third parties, such as Eskom and Telkom, who did not identify with the PGRs' vision. This was especially the case with industrial development and associated pollution that may impact on the PGRs' sustainability and marketability.

Other concerns expressed by the PGRs included that of maintaining their marketability in a sector which is developing other similar products (market competition); ensuring that conservation monitoring systems and programs are consistent and reliable for correct long-term management; and the danger of over-population following elephant introductions.

Institutional support

In terms of the nature of support from external agencies with regards to establishment and management of the PGRs, little support was provided at a national level. While some national assistance was provided in the form of tourism promotion in the UK and Europe, PGRs felt that national government needed to acknowledge them as *bone fide* role players in the regional economy in terms of wealth generation, job creation, social upliftment, poverty alleviation, foreign exchange earnings and biodiversity conservation. They repeatedly highlighted the need for government to streamline bureaucratic procedures with regards to reserve establishment and to make them more facilitative and less obstructive. Most PGRs felt that current legislation was more a burden than a support. In one instance the national government obstructed provision of financing by a non-South African private sector source in the context of the Investment Offset Program (only high technology transfer projects were deemed allowable). Therefore, the PGRs identified as one of the most important actions that government could take to assist in the establishment of private reserves was to make investment in the creation of private reserves more financially attractive for foreign and local investors, through providing tax breaks, simplifying the small medium enterprise development program (SMEDP) process for obtaining grants, providing low cost loans, as well as providing easier access to soft financing.

PGRs also felt that government should provide financial incentives and rewards for their participation in and contribution towards biodiversity conservation and protection (such as tax breaks). Furthermore, technical services, such as environmental analysis and extension of poverty relief programs (e.g. VUKA managed programs) should be provided to private reserves. Some PGRs also felt that government should take custodianship of the black rhinoceros populations supported on the PGRs. Given that these PGRs are performing a service to society by conserving an endangered species, they believe that government should cover the costs associated with managing and maintaining them.

A need was expressed by respondents for government to provide community consultants to educate local communities regarding the concept of conservancies and how local communities may benefit from them.

While approval of PGRs was expressed at a provincial government level, no support or assistance was forthcoming. At a local government level, assistance with land negotiations was provided. Tourism agencies have generated much business for some of the PGRs. In particular, the Eastern Cape Tourism Board has shown interest in the development of the PGRs in the region. PGRs felt it was also the role of national government to promote and market both South Africa and the Eastern Cape, internationally. Furthermore, the feeling was that government should also improve and facilitate access to the Eastern Cape by freeing up inbound flight access to South Africa and by establishing an international airport at Port Elizabeth. They believed access to the rural areas would be facilitated by improving the road infrastructure.

The PGRs identified universities as the other agencies that provided valuable support. The local universities (University of Port Elizabeth and Rhodes University) had a history of cooperation and assistance in terms of providing useful management information based on scientific research in a cost-effective fashion, as well as training

of staff. The PGRs also used consultants extensively but considered them to be expensive. The private sector also made a contribution with external investors making a large contribution towards game purchases, valued at R2.3 million.

5. DISCUSSION

5.1 ECONOMIC BENEFITS

5.1.1 COMPARATIVE INCOMES

Direct earnings accruing from eco-tourism services provided by PGRs appear to be substantial. The total gross income (TGI) generated by four Indalo PGRs in 2001 alone amounted to R46.6 million or R1 605/ha[3], outperforming all other land uses for that year (see TABLE 1 for sources of these data). In comparing the latter figure with incomes calculated for other land uses, it is evident that eco-tourism on these PGRs generates 10 times greater incomes per hectare than mohair and dairy farming; more than 15 times that for livestock and game farming and overseas hunters; 20 times that for small-stock farming; and 30 times that for boer goat farming (see TABLE 1 for a summary of comparative incomes). Considering that the entire SA mohair industry generated R225 million in 2000, the fact that only four PGRs managed to earn a quarter of that total in 2001 is a sobering thought, especially in view of the fact that the actual economic impact of these eco-tourists on the provincial and national economy is significantly greater than their direct expenditures to the PGR (see Section 5.1.2).

TABLE 1: Total gross incomes per hectare (TGI/ha) of alternative land use types compared with eco-tourism-based PGRs.

Land Use	TGI/ha	Source
PGR Ecotourism	R1 605	This study
Mohair	R155	Sims-Castley 2002
Boer goats	R45	Sims-Castley 2002
Livestock	R100	Sims-Castley 2002
Small-stock	R80	GAENP SEA 2002
Dairy	R177	GAENP SEA 2002
Game farming	R103	GAENP SEA 2002
Overseas hunters (excl. ecotourism)	R93	ECGMA Newsletter 2001

5.1.2 MULTIPLIER EFFECTS

During their visits, visitors to PGRs make other direct expenditures both in South Africa and in the province. Among other things, they buy crafts, spend time in hotels and rent cars. Economic sectors affected include transport (air travel, local car hire, petrol), communication, manufacturing (including foodstuffs, beverages, clothing), trade (retail, accommodation, catering, crafts) and the financial sector (Geach 2002). Therefore, the true economic impact of the visiting eco-tourist extends beyond the direct expenditures made to the PGRs, but also incorporates second and further rounds of expenditures which occur in the economy due to linkages to these other sectors and the effects of the income multiplier. The Namibian Ministry of Environment and Tourism calculated that within the general wildlife-based tourism population, visitors spend on average a further 60 – 80% in addition to their

[3] This figure was calculated using a combination of data from the current survey, as well as Sims-Castley (2001)

expenditures with safari operators and outfitters (MET 1997 cited in Humavindu & Barnes 2003). A 70% multiplier effect applied to gross incomes of R87.2 million generated by 12 existing PGRs in 2002/2003 (see Section 4.3.3) would imply that visitors made direct and indirect expenditures amounting to R148.2 million.

Most international visitors travel through the Garden Route as part of their visit and many stay overnight in Port Elizabeth. Smaller enterprises in the Eastern Cape benefit from the marketing expenditure of larger operations like PGRs (Geach 2002). This has spin offs for private sector initiatives – since the area is a 'long haul' destination, the PGRs increase the range of attractions (i.e. diversify the tourism product), which encourage visitors to stay longer in the province, thus increasing their economic impact in the region.

The dominance of an existing single and often unstable agricultural economic sector in rural areas of the Eastern Cape means that the establishment of ecotourism-based PGRs provides an opportunity to diversify the rural economy, thereby generating more economic sectors. This varied source of income will enhance stability, economic returns per hectare through more profitable land-use, attract new additional investment into the Eastern Cape and will contribute to the regional and national Forex and GDP.

For land owners who are adjacent to "Big 5" areas, it is likely that land values will increase as has happened in Mpumalanga near the Kruger National Park and near Phinda in KwaZulu-Natal (Geach 2002), as well as in the NW and Northern Provinces where land has been incorporated into "Big 5" areas. While a stock farmer cannot afford to pay more than R700/ha, land suitable for wildlife-based ventures such as PGRs can fetch more than twice that amount (Geach 2002).

Eco-tourism also lends itself very well to developing and building partnerships with the private sector and with communities. PGRs, by enhancing eco-tourism in the area, enable rural people to generate revenue both within the PGRs as well as the peripheral areas. This multiplier effect, started with direct earnings from tourism, will stimulate the local economy, which could produce a significant increase in the economy of the region. An array of other potential initiatives exist with regard to previously disadvantaged communities and informal settlements within and around the PGRs. Apart from preferential employment of locals, these initiatives include promoting development in townships/settlements through arts and crafts; introducing local children to environmental education; conservation outreach programs within the communities themselves and linkages with teachers in local schools.

5.1.3 EMPLOYMENT OPPORTUNITIES

In terms of employment opportunities, eco-tourism on PGRs perform well employing 3.5 times as many people as the previous pastoral operations (of which none of the farm workers were laid off). It is calculated that the seven PGRs surveyed will provide a total of 623 direct fulltime jobs in the tourism sector. This excludes the 124 employment positions created through outsourcing in the initial development phase. Furthermore, onsite employment figures seriously under-estimate the employment opportunities provided by eco-tourism as a form of land use, as tour operators, service providers and other ripple effects in associated and supportive industries also generate a considerable number of jobs. It has been estimated that each 10 foreign tourists will

create one local job (Hugo 1992). This suggests that with 35 975 overnight visitors in 2001, 75% of which are foreign, the PGRs generated 2 698 direct and indirect employment opportunities. In 2003 this figure increased to 3 493.

In addition to the average annual salary per employee increasing by a factor of 5.7 increasing direct income to households, further benefits to staff, such as accommodation, food and training, were also substantially improved.

All the PGRs surveyed are committed to job creation, community development and black economic empowerment (BEE). The existence of generally poor neighbouring communities allow them to fulfil their social responsibility policies by employing staff locally despite lack of skills and, in many cases, illiteracy. Thus, eco-tourism-based PGRs can offer greater scope for unskilled labourers to develop new skills and thereby be exposed to a wider variety of employment opportunities than agriculture would offer. The PGRs will thereby assist in alleviating poverty by enhancing the human skills base/human capital through training in various fields of expertise and providing a wider range of job types and opportunities for the local people than currently exist.

5.1.4 SUSTAINABLE LAND-USE & BIODIVERSITY CONSERVATION

Eco-tourism-based game farming has often been described as a sustainable alternative to livestock farming (Berry 1986; Barnes & de Jager 1996; Kerley *et al*. 1995), especially in semi-arid areas where low rainfall precludes cropping and livestock production is marginal. Furthermore, private wildlife operations also have the potential to contribute significantly to the conservation of South Africa's biodiversity. It is therefore the tendency in economic analyses to list sustainable land use, biodiversity conservation and ecosystem services (clean water, carbon sinks, etc.) as social benefits of game-based eco-tourism land use. However, it cannot be overlooked that eco-tourism, when run by the private sector, is driven by financial incentives (i.e. maximizing financial earnings) and is not regulated by social externalities[4], such as loss of biodiversity through inappropriate land management, suggesting that concerns for biodiversity conservation could take a back seat should profits be threatened. This issue is discussed in more detail below.

Providing the game-viewing experience is a comprehensive package consisting of tangible elements (accommodation, food, etc) and intangible components, such as the clients' perceptions, expectations, value considerations and their hope for fulfilment of those expectations (Radder 2001). Tailoring products (goods and services) to the specific needs of customers is fundamental to success. Therefore, in order to attract and retain a loyal client base, the PGR will tend to offer an African experience based on what the client perceives this experience to be (to attract the client) and to provide satisfaction based on that perception (to retain the client in the future or to encourage favourable referrals) (Radder 2001). However, it has been demonstrated that tourists have misconceptions about the nature of biodiversity and only appreciate a small proportion of vertebrate biodiversity, typically focussing on the charismatic megafauna which in Africa are exemplified by the "Big 5", namely lion, leopard, elephant, rhinoceros and buffalo (Kerley *et al.* 2003). As a result, these species are

[4] In this instance, 'externalities' refers only to *external diseconomies of production*, where increases in a firm's production results in uncompensated costs to others (society) (Mansfield 1988).

used as a major drawcard for the tourism market (Western 1992; Goodwin & Leader-Williams 2000). Research has shown that tourist satisfaction is generally attained once they have viewed the 'charismatic' species they set out to see, with little interest in more secretive species like kudu and less visible species such as birds, reptiles and invertebrates (Kerley *et al*. 2003). In addition, the density at which the tourist prefers to view these species to experience maximum viewing satisfaction is often greater than the ecological carrying capacity. This has been demonstrated with species such as elephant (Novellie, Knight & Hall-Martin 1996) and lion (Power 2003).

Another way to boost the eco-tourism potential of the property is to introduce certain species for the sole purpose of increasing visibility and diversity of the game. This normally involves the introduction of non-native species which are either exotic or extra-limital in their distribution (Castley *et al*. 2001). Giraffe and white rhinoceros are prime examples of extra-limital species which are native to southern Africa but outside of their natural range within the Eastern Cape. Inappropriate introductions of this nature have been shown to result in changes the abundance of native species, as well as the modification of functional forms of the vegetation (E. Jacobs, *pers. comm.*).

Private wildlife ventures have also been known to clear bush and artificially manipulate the landscape in order to 'enhance' the game-viewing experience of their clients (J.G. Castley, *pers. comm.*).

Consequently, these factors have resulted in PGRs (a) stocking very high numbers of charismatic species; (b) stocking extra limital species; and (c) favouring false savanna landscapes (altered thicket), all of which have adverse effects on ecosystem function and biodiversity. There is however no evidence provided for any of the currently surveyed PGRs undertaking these activities.

Therefore, a paradox exists in that while wildlife operations are potentially a more suitable, and sustainable, form of land use than pastoralism in terms of biodiversity conservation, inappropriate management practices may compromise and negate these benefits. Even conservation conscious PGRs may adopt unsustainable management approaches through lack of appropriate information, or as the market reaches saturation and competition amongst PGRs increases. Before PGRs can unequivocally claim sustainable land-use and biodiversity protection as a benefit to the economy, mechanisms need to be in place to ensure that landowners apply and adhere to sound conservation management practices.

5.2 RECOMMENDATIONS

- To assist PGRs in gaining recognition as significant role players in the economy, **it is recommended that a more detailed economic analysis be carried out that assesses the full economic impact of the PGR industry on the regional and national economy**, including a quantification of the industry's contribution to the national GDP; a more complete analysis of multiplier effects resulting from the industry; an estimation of the allocation of generated incomes amongst different earners within the industry, especially the poor segments of society; as well as a more detailed examination of the characteristics of demand for wildlife

experiences. Further research should be carried out to establish how the industry will adjust as the market moves to a point of saturation, thereby increasing competition amongst the PGRs.

- For PGRs to both improve their marketing effectiveness and to design a more cost-effective product, **it is recommended that a survey be carried out to understand visitor preferences and to determine what they spend their money on**.

- In order to properly calculate past and present growth with the aim to predict trends in the future growth of the industry, it is necessary to acquire a suitable time-series of data. **It is therefore recommended that this survey be repeated at least biannually.**

- One step towards PGRs establishing official recognition for their role in biodiversity conservation would be to quantify the contribution these PGRs are making towards meeting both national and bioregional biodiversity targets. **PGRs should therefore be encouraged to undertake comprehensive biodiversity audits of their properties**. Furthermore, the inclusion of additional biodiversity elements should be a priority in a land acquisition policy should these PGRs be considering expanding.

- It is important to determine what the economic impacts/costs of stocking extra-limital species are, both to the private sector and to society as a whole. Further research into the ecological impacts of extra-limital species introductions is also crucial. **It is recommended that Indalo members actively facilitate such research**.

- The PGR industry in the Eastern Cape is thriving, and is driven by a diversity of interests. It is of value to all of these participants to obtain sound and objectively collected information on the status and trends in the industry. This information is also critically important for the influence it has over the public and policy makers. The quality of the data collected and the level of interpretation influences the impact of such research. It is therefore important for this research to be conducted by an independent research body**. It is recommended that Indalo continue obtaining the services of independent research institutions to provide this service.**

- Given the value of the information provided in this report, **it is recommended that this report be released to the public**, in order to improve the perceptions of the public, industry stakeholders and policy makers as to the value of PGRs to society. This could be achieved through the publication of an edited version of this report, protecting the confidentiality of the information, in a reputable journal.

6. CONCLUSIONS

As a land-use, eco-tourism-based game farming is an economically and ecologically desirable alternative to other land uses, including mohair and dairy farming. Not only does it generate more income per unit area, but it also creates more jobs that are better paid. Through preferential recruitment and training of local people, social upliftment and poverty alleviation is achieved by raising literacy and numeracy levels and providing skills to previously unskilled individuals. Private game reserves also benefit the regional tourism sector by diversifying the tourism product in the Eastern Cape, thereby encouraging tourists from the Garden Route to stay in the area longer. Furthermore, the local economy is also stabilised by the creation of more economic sectors. While PGRs could potentially play an important role in biodiversity conservation and maintenance of ecosystem services, mechanisms need to be established to prevent inappropriate species introductions; overstocking of mega-fauna; and uncontrolled transformation of natural vegetation. Finally, there is an urgent need for national and provincial government to acknowledge the important contribution this industry is making towards the country's economy and to provide assistance and support with both establishment and management of private reserves.

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