

**STRATEGIC ENVIRONMENTAL ASSESSMENT OF THE
GREATER ADDO ELEPHANT NATIONAL PARK**

SPECIALIST REPORT NO. 13

PARK FORECASTS

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1. TERMS OF REFERENCE

The terms of reference for this task are to:

Develop financial models for the park for a 10-year time frame, using different ecotourism and visitor forecast profiles in terms of different degrees of park expansion; present these in terms of a baseline scenario without external funding versus a scenario with such funding.

2. BASELINE SCENARIO

The boundaries of the proposed GAENP are not clearly defined for the medium- to long-term (5 to 15 years); indeed, even the boundaries for the short term (next 2 to 5 years) are not yet finalised. The planning domain identifies the maximum long-term expansion possibilities. The most logical and probable boundaries were developed in consultation with SANParks staff. Meanwhile, financial planning is difficult without exact knowledge of the park's boundaries. For this reason, the baseline scenario in the report refers to a smaller area of the larger planning domain, by considering areas that are already relatively well consolidated. Most cost estimates given in the report are best approximations. Actual costs may differ due to larger- or smaller-than-expected total land area for the GAENP, or else to changes in boundary alignment, since both can affect the costs of infrastructure. For these reasons, a financial model for the baseline scenario has been developed, and variations in the model (scenario) are considered.

The baseline scenario draws on extensive input from various SANParks staff, and, despite disagreements, it is regarded as a likely and probable scenario. However, park expansion may entail countless options, alternatives and combinations. Many are explored in this report, some in less detail than others due to time limitations for the study. The estimates and cost categories are largely based on the author's experience with similar developments - also within SANParks and mostly in the North-West Province.

The model has been separately applied to the five different geographical sections of the GAENP. As mentioned, the baseline scenario considers areas of the respective sections that are already fenced or currently under serious negotiation. These sections require somewhat different management options and may offer very different tourism opportunities. Similar considerations have been applied to all sections, although the management requirements, development needs, running expenses and tourism products are certain to vary. An approximation of the larger planning domain and the five sections of the park are detailed in Figure 1 (Appendix). The five geographical sections of the proposed GAENP, and the approximate hectares of each that have been considered in the baseline scenario, are:

- **Woody Cape:** Incorporating the current Woody Cape Nature Reserve with some likely additions. Includes the area of a planned marine reserve, the coastline and the east bank of the Sundays River; it does not extend north of the N2 highway between Port Elizabeth and Grahamstown. The non-agricultural biological

components are open sea, coastline, indigenous coastal forest and coastal grassland. Excluding the open ocean of the marine reserve, the baseline scenario considers approximately 20 000 hectares of the Woody Cape Section.

- **Addo:** Stretching north of the N2 towards the R342 Paterson to Kirkwood road, its eastern and western boundaries follow land already incorporated or very likely to be added. The area consists predominantly of gently undulating thickets of Valley Bushveld. Approximately 30 000 hectares of the Addo Section are included in the baseline scenario.
- **Nyathi:** Extending north of the R342 Paterson to Kirkwood road, including land purchased or scheduled to be included to the east and north; its western boundary is the R335 Zuurberg road. The land is more rugged and difficult to access than the Addo Section. It includes small patches of thicket, patches of savanna, and more mountainous areas. About 15 000 hectares of the Nyathi Section are included in the scenario.
- **Kaboega:** Lies immediately west of the Nyathi Section and extends to the extreme western boundary of the planning domain, while the southern and northern boundaries roughly correspond with the foot of the Zuurberg Mountains. Mostly extremely inaccessible due to the mountainous terrain; contains a wide variety of habitats, ranging from indigenous forest, to fynbos, grassland and Karoo elements. The baseline scenario covers approximately 60 000 hectares, of the Kaboega Section, including the Kaboega Dam and portions of the Sundays River.
- **Darlington Dam:** Stretching north of the Zuurberg mountain range as far as the R400 Waterford road. Relatively flat, with low rainfall and vegetation consisting mostly of Karoo elements. The scenario refers to approximately 31 000 hectares of the section, including Darlington Dam.

The total area of the five sections (excluding open water) that is considered in the baseline scenario is approximately 156 000 hectares. An additional 226 000 hectares of the planning domain are not included in the baseline scenario but are briefly discussed in Section 6 at the end of this report.

3. PLANNING APPROACH

Each section of the park has been considered in terms of potential development requirements; estimated costs, annual expected costs, and income opportunities are identified according to categories outlined in Specialist Report No. 11: Ecotourism Scenarios. The following points must be borne in mind when reading and interpreting the financial models for each section:

- A project of this scope cannot be implemented in a single phase; approximate timing of different activities has been built into the development plan (e.g. the Addo, Woody Cape and Nyathi sections are likely to be developed before the Kaboega and Darlington Dam areas), thus phased timing is likewise taken into account in the financial models.

- Inflation has not been built into the model, as this would add complications while adding little value to the end result. Therefore, it must be remembered that developments that occur later on, will undoubtedly cost more than has been indicated in the model.
- Interest, depreciation and similar costs have not been included. Where these are essential to consider, however, they have been dealt with separately.
- Roads and fences will be aligned in the most cost-effective and environmentally sensitive manner, obviously with due cognisance to achieving park objectives.
- The cost of game fencing reflects the most appropriate choice of design for their intended purpose. For example, in certain areas an elephant-proof Armstrong fence is required, while in other sections a six-strand stock fence or no fence is planned.
- Park roads fall into three broad categories:
 - Surfaced roads suited to year-round use by sedan vehicles. These are usually costly structures, with a permanent wearing surface provided with drainage and other improvements;
 - Secondary surfaced roads suited to sedan vehicles, but necessarily closed during times of high or above-average rainfall.
 - Management tracks or 4x4 trails that may be simple tracks or built mostly with *in situ* material; these may be impassable (even for 4x4 vehicles) for longer periods of the year than secondary, surfaced roads. The tracks would be used by park management or for open vehicle game drives and by specialist 4x4 users.

All new roads would be properly aligned and subjected to an Environmental Impact Assessment (EIA). A provision has been made under operational costs for the maintenance of the roads. This will extend their life, but provision for upgrade must be made for secondary and 4x4 tracks after about 10 years.

- The costs reflected are only those likely to be borne by SANParks, or covered by funds raised by them. Private concessions or developments (when planned) are not reflected in the schedules unless explicitly stated.
- Building requirements are according to SANParks' input and are based on their current standards, especially for staff accommodation.
- Provision has been made for reclamation of old roads and tracks, farm structures and fences, where required.
- The current vehicle fleet at AENP is not adequate for the expanded park and additional vehicles are budgeted for. Provision has been made for the annual replacement of this vehicle fleet in addition to normal maintenance and running costs. It is anticipated that vehicles can be shared between sections, therefore some sections do not have vehicles figured into their costs since these are accounted for in the Addo Section.
- The figures for game sales include the estimated cost of boosting populations to at least 50% of the targeted maximum stocking rate. No additions have been budgeted for if an area already contains game above this amount; but the estimates do not assume that game will move (or be moved) between sections, or at least not in significant numbers. All new game introductions have been estimated at current market rates (not auction prices), although SANParks may

obtain game from their own stocks at lower costs or at no cost to the park. At this stage there is no indication as to what game may be supplied from SANParks' own stocks.

- A budget for alien plant clearing is included although in the past this activity was often funded by separate sources (e.g. the Department of Water Affairs and Forestry (DWAF) Working for Water Programme, with some funding from the Poverty Relief Fund). The large budget allocated to the Addo and Woody Cape sections is an indication of the recurring nature and magnitude of this problem in all areas. (Park management feel the current budget estimate is inadequate but larger amounts would be difficult to administer.)

Each section requires a detailed account of capital expenses, with operational costs broken down into staff wages and other costs, as well as expected income. The cost of game introductions and possible income from game sales are also presented. Finally, details of the tourism options are discussed and summarised.

Tables in the report were extracted from an interactive model developed using Excel; many of the parameters in the model could be changed to view the effects on overall viability of park expansion. The model has been made available to the client.

4. DEVELOPMENT COSTS, OPERATIONAL COSTS AND POTENTIAL INCOME

4.1. ADDO SECTION

The Addo Section may have the highest potential income generation capacity of all the areas, estimated here at approximately R335 per hectare per annum. However, this section is likely to have the highest conservation capital requirement per annum at approximately R1 050 per hectare. This is probably due to the location in this section of Park Headquarters, with its many 'overhead' capital costs. In addition, the Addo Section already contains significant investment, as a result of current operations. A detailed breakdown of the development and operational costs as well as projected income for the Addo Section, along with possible phasing of these, is presented in Table 2 (Appendix) and discussed below.

4.1.1. CAPITAL COSTS

Land

It is estimated that an additional 8 855 hectares must be acquired to consolidate the Addo Section's core area of 30 000 hectares, at an average cost of approximately R1 400 per hectare or about R12.2 million total.

Fencing

The Addo Elephant Camp is currently enclosed by an elephant-proof Armstrong fence. The expansion of the area to incorporate recently acquired land and future consolidation of the core area could result in a final perimeter boundary of approximately 85

kilometres. Thus, an estimated additional 60 kilometres of fence will be required and approximately 15 kilometres of Armstrong fence will need to be removed. Most of the new fence will need to be of a predator-proof design having four electrified stands; this has been costed at R55 000 per kilometre. The estimate includes clearing the fence line, materials and labour. In addition, removal of some portions of the Armstrong fence is estimated to cost approximately R55 000 per kilometre. Hence, the total cost of re-aligning the perimeter fence and removing the redundant existing fence is estimated to be in the region of R4.2 million. It is possible that some farmers may opt to remove their own fencing, thus reducing reclamation costs to some extent. Because farmers are unlikely to remove all fences, some removals by SANParks would still be required. This principle is assumed for all sections of the park.

Roads

Design and construction requirements for roads will be determined largely by the nature of the tourism product. The Addo Section is expected to cater predominantly to self-drive tourism. This places a large cost burden on SANParks to provide and maintain a suitable road network that is accessible to sedan vehicles for most of the year. Further discussion on this issue can be found in the ecotourism scenario report. In addition, a track network, for management purposes and to some extent for guided game-viewing tours, is also required.

It is estimated that approximately 13 kilometres of sealed all-weather-access road will be required. This may be tarred, although other products such as Dustex, a seal incorporated into the surface layer, may be a practical option. Dustex is new product estimated to cost half the price of typical 'chip-and-spay' tarred surfaces; it also more closely resembles the colour of the road building material. If *in situ* material is used the visual impact will be less than for tarred surfaces (more details can be found at www.dustex.com.au). This type of road will typically cost approximately R250 000 per kilometre. The envisaged roads would link the current tourist camp with a new camp and entrance gate located in the south-eastern corner, and be easily accessible from the N2.

A further 100 kilometres of surfaced gravel road for tourist use would supplement the 75 kilometres already present. These roads would be developed mostly in the newly acquired areas where access has yet to be opened up to the public. Surfaced gravel roads are costed at approximately R65 000 per kilometre. The exact cost will depend on their final alignment, design specifications and the local proximity of suitable gravel. The gravel cannot be obtained from within the national park since gravel pits are considered a mining activity, which is categorically prohibited in national parks. The total cost of this new road network is estimated at R6.5 million.

Finally, a network of tracks for park management purposes is required to access parts of the park, the boundary fence and other facilities. It is anticipated that this will be limited and built mostly with *in situ* material. Parts of the tracks may be made available to limited guided drives in 4x4 vehicles. The cost of the track network is estimated to be about R10 000 per kilometre, with a total cost of R600 000 for 60 kilometres.

Buildings and other infrastructure

Two additional waterholes will be required for game watering, while upgrading of the game handling pens is required; both of these items are estimated to cost approximately R110 000. The current staff accommodation is not adequate at the Park Headquarters and should be upgraded to improve living conditions for the staff. Six additional units are proposed for new staff. The new units will cost R80 000 each; with the refurbishing of the existing units, the total cost of staff accommodation is R760 000.

Provision has been made for the development of a cultural and environmental education centre that will include several offices. This would provide a base for social ecology activities and community-orientated initiatives within the park. A need for a formal education centre was suggested by some of the park staff. This is not envisaged as a large facility, and would probably cover less than 400 m², costing approximately R600 000.

A new entrance gate with accompanying staff accommodation will be required in the southeast area. Entrance control points will also be required on the 21-kilometre stretch of the Addo Heights road that runs through the park since it may not be possible to close this road to public traffic. The infrastructure for new entry and control points, with a larger and more elaborate structure, is estimated to cost approximately R600 000.

Support infrastructure including electricity, water, roads and sewerage will be required for the new facilities; in some instances existing infrastructure will require upgrading. This is estimated to cost about R400 000. Provision has been made for offices and workshops to be extended, at R300 000 for this item.

Removal or reclamation of old farm structures, roads and croplands is estimated to cost about R350 000. Provision has also been made for Environmental Impact Assessment (EIA) work. For this, R600 000 has been added under the Addo Section for the entire park to carry out EIAs for certain developments throughout the park.

These 'once-off' development costs for the entire Addo Section are estimated at approximately R30 million. Excluding the purchase price of additional land, this averages about R630 per hectare. This is a large investment that excludes current assets and does not include expanding the tourism products. If those costs were added then improvements per hectare are likely to be in excess of R1 100 per hectare.

Equipment

The Addo section has equipment on its inventory at present, but as this section expands it will require additional equipment. In addition, the Nyathi Section will be managed from Addo and therefore the requirements for equipment for both areas is combined here. Provision has been made for two 4x4 vehicles, a new tractor, a 5-ton truck and repairs to the grader. The last two pieces of equipment can be used throughout the park. The total equipment requirement is estimated to cost just over R1 million. Also, a provision has been made under this section for the annual replacement of some equipment for the entire GAENP.

Game

It has been assumed that game animals in the GAENP should be stocked to at least 50% of their long-term carrying capacity. This would ensure a population large enough to achieve rapid growth while providing an acceptable tourism product. The Addo Section already contains significant game numbers and therefore minimal introductions are required. Table 4.1 presents the estimated current numbers of game species, the predicted number required to reach 50% of their long-term carrying capacity, the costs accrued to achieve this, and the estimated sustained removal value of certain species. The buffalo account for a large proportion of income from game sales. Buffalo may require about 4 years to reach the target number of 521 individuals, if they increase at 12% per annum and productive animals are not removed from the population during this period. A 12% increase is a likely scenario under good conditions; their potential to increase is unlikely to exceed 16%, but the population could decline if conditions for the species should deteriorate (although this is unlikely with good management and monitoring).

Table 4.1. Game species required for the Addo Section, together with their current population estimate, value in Rand, number required to reach 50% of their long-term carrying capacity, and the expected annual removal value once the target population has been attained.

Species	Estimated current population numbers	Number required to achieve 50% carrying capacity	Estimated cost of introductions (Rand)	Potential annual removal value (Rand)
Buffalo	250	174	-	4 168 421
Plains zebra	25	30	5 027	6 505
Red hartebeest	313	83	-	39 000
Warthog	100	24	-	1 439
Elephant	328	265	-	211 745
Eland	210	166	-	139 483
Ostrich	260	160	-	47 872
Black rhino	32	99	-	-
Kudu	1 000	201	-	60 345
Bushbuck	200	88	-	19 806
Lion	-	10	45 000	5 000
Spotted hyena	-	10	28 000	1 600
Wild dog	-	8	11 250	750
Cheetah	-	5	7 500	500
Total			R 96 777	R 4 702 467

4.1.2. ANNUAL OPERATIONAL EXPENSES

The annual operational expenses for the Addo Section are expected to reach approximately R4.6 million. As is the case with many development expenses, the Addo Section will carry some of the fixed costs for operation of the GAENP, and therefore will be more costly to manage than other areas. The annual operating expense of R153 per hectare is the highest among all park sections. A large component of this is the budget to clear alien plants, with the exception of Woody Cape, the other sections do not include this budget, as the activity is costed to the Addo Section. If this cost is removed then operating expenses fall to about R100 per hectare per annum.

The largest proportion of the budget, almost 70%, is committed to salaries (reflecting a normal situation for this type of operation). A relatively significant percentage of this is to employ staff for gate control. There is a need to have 24-hour access along the Addo Heights road; this alone will consume over R250 000 in salaries annually. If agreement can be reached to close this road or limit access, a significant savings could be passed on to SANParks' operations.

It is assumed that the fence patrol will be operated on a contract. This should cost about R1 500 per kilometre per annum and will involve travelling the fence line once a day, or perhaps every other day, checking that the electric wires are operating and for holes in the fence, and removing vegetation from the lower electric strands. Constant fence maintenance is essential in areas where dangerous game, such as elephant and lion, are introduced. The annual cost of fence maintenance is budgeted at R128 000.

4.1.3. INCOME

The Addo Section is projected to achieve the highest income of just over R10 million by Year 7. A large portion of income can be derived from game, closely followed by accommodation profits, with a smaller contribution coming from entrance fees (approximately R1.2 million). Income from game sales, as indicated in Table 4.1, may be derived almost exclusively from the sale of buffalo (almost 90%). These animals are currently trading between R100 000 and R150 000 (or \$12 000) per head, partly because they are considered 'disease free' (from foot and mouth, tuberculosis and corridor disease) and because there is a large demand for them. If the demand for live game continues to grow in the future then these prices may indeed be sustained; however, it is not possible to predict the trends or future of the live game industry, and income projections from game sales should be regarded with caution. Buffalo numbers in the Addo Section are high and if they grow at 12% per annum they should reach their target population within 4 years. Income from game therefore may increase after that period. It may well transpire that game can be translocated from the Addo Section to other sections of the GAENP, which would reduce the income to the Addo Section but reduce the cost of game introduction to the receiving section.

The tourism product for the Addo Section has been split into the more affordable self-drive option, which includes access for day visitors, and the more expensive, guided operations. SANParks will likely provide and manage the day visitor area, while the

private sector will probably finance and manage other options (see report on ecotourism scenarios).

A summary of potential income from different tourism options in the Addo Section is listed in Table 3 (Appendix). The current SANParks rest camp and the Gorah concession lie in the northern part of the Addo Section. Income generated from these facilities (or expected to be generated from existing agreements) is presented for each facility. Discussions with SANParks staff suggest that another camp is planned for the Addo Section, in the currently undeveloped southern area. SANParks would like to develop the new camp to accommodate 50 guests, at an estimated cost of R4 million; this facility could generate just under R1 million to SANParks in profit per annum. (Note in Table 3 (Appendix) that the concession percentage is applicable to the concessionaires, while the profit percentage is applicable to SANParks camps. Likewise the concession fees are earned from concessionaires, while SANParks income is applicable to SANParks camps and represents the profit after costs.)

In addition to a new SANParks camp, another private camp may be included in the southern area. This would be a 30-bed camp able to pay SANParks a further R750 000 per annum. It is expected that any new road network required can be built with private funding from the concessionaire.

In sum, approximately 245 total beds could be made available in the area, with a capital investment of R32 million. This could generate R4.1 million annually for SANParks, while creating at least 117 full-time jobs, in addition to jobs associated with initial development and multiplier effects. The cost of additional tourist roads are built into the Addo Section costs. It is estimated that this section of the park will attract about 140 000 visitors per year, which is about 45% more than at present. These visitor numbers are only expected to materialise six years after the start of the development programme.

The expected income less the annual operational costs should leave the Addo Section with a net profit of just over R5 million, but this includes about R4 million from buffalo sales alone, and it also excludes the cost of capital for financing the SANParks developments.

4.1.4. SUMMARY

The Addo Section conserves important thicket vegetation and associated plant and animal communities of the Eastern Cape. This habitat is well suited to elephant and black rhino as well as other big game species. The topography also makes the development of tourism products more affordable. Its location with good road access and other infrastructure will contribute to making it potentially the most profitable area of the GAENP, and income should be able to exceed expenses in the long term. The area already contains significant conservation and tourism infrastructure, however a further R31 million will be required to consolidate the area and establish basic infrastructure, with an additional R4 million contribution from SANParks for tourism facilities.

4.2. NYATHI SECTION

The Nyathi Section has the second highest income generation potential at R343 per hectare. Its total development costs are relatively low at R639 per hectare, partly due to the fact that many costs are borne by the Addo Section, which lies immediately south of the area. The nature of the tourism product (Big-Five game viewing) also reduces the need for expensive infrastructure. Financial projections and other details concerning the Nyathi Section are presented in Table 4 (Appendix) and discussed below. The implementation of current proposals must commence as soon as possible since commitments have been made to the concessionaire in terms of the game introduction programme and the timely completion of the boundary fence.

4.2.1. CAPITAL COSTS

Land

Most of the land has been already acquired for this section; the outstanding consolidation (mostly agreed upon and committed to) amounts to about 2 300 hectares at a cost of about R3.5 million.

Fencing

It is anticipated that the area will contain Big-Five game, in line with the game-viewing product offered to concessionaires. No fencing of any suitable standard is present, therefore 54 kilometres of new game fence needs to be erected. Fence construction has already begun with some 9 kilometres of elephant-proof Armstrong fence nearly installed; the remaining 45 kilometres of fencing will be a standard electrified, predator-proof structure costing R55 000 per kilometre. The total cost of new fencing is estimated at R3.4 million, but the cost of removing old internal and perimeter farm fences will increase this to about R3.6 million.

Roads

The Nyathi Section will be utilised by private concessionaires who may be responsible for constructing most of the roads. SANParks anticipates it will be required to upgrade some of the existing tracks used for management purposes and provision has been made for this. Most of the roads in this section will be tracks suited to 4x4 use. It is unclear if SANParks or the concessionaire must ultimately provide the road network. It may unfold that 75% of the road development costs indicated in Table 4 (Appendix) will be borne by the concessionaire.

Buildings and other infrastructure

Very few buildings are required because of the proximity of Park Headquarters in the Addo Section, thus there is less need for capital items in this section. However, improvements for game in the area include water provision and animal handling facilities; these are expected to cost less than R250 000. Reclamation of old lands, buildings and tracks is estimated to cost R190 000.

New entrance gates may be required for the area: if the R335 Zuurberg road is fenced into this section then it will be necessary to provide gates on the road; if the road is not

incorporated (perhaps the more likely and feasible option) then the cost of two entrance gates can be removed from the budget.

Equipment

Equipment here will be supplied from the Addo Section, and therefore no provision has been made.

Game

The Nyathi Section currently has some game, although the exact numbers are not known. The animals consist mostly of plains game and some black rhino. With the exception of rhino, additional animals of the species present can be supplied relatively cheaply; the budget for game introductions is presented in Table 4.2.

Table 4.2. Game species for the Nyathi Section, with the number of animals and expenditure required to achieve 50% of the long-term stocking capacity, and estimated expected annual income from removals.

Species	Number required to achieve 50% carrying capacity	Estimated cost of introductions (Rand)	Total number after introductions	Potential annual removal value (Rand)
Buffalo	147	17 723 842	294	3 524 211
Plains zebra	19	30 000	38	4 125
Mountain zebra	6	42 500	13	7 500
Red hartebeest	50	103 000	100	23 400
Warthog	14	5 036	29	863
Elephant	55	1 102 840	110	44 114
Eland	35	117 620	69	29 059
Ostrich	33	43 218	66	9 973
Black rhino	30	445 016	59	-
Kudu	78	108 621	155	23 276
Bushbuck	26	33 011	53	5 942
Lion	8	33 750	15	3 750
Spotted hyena	8	21 000	15	1 200
Wild dog	8	11 250	15	750
Cheetah	5	7 500	10	500
Total		R 19 828 203		R 3 678 663

A large number of animals must be introduced into the Nyathi Section to meet the tourism goals for this area. Just under R20 million-worth of game may be required, of which buffalo comprise almost 90%. However, buffalo would provide over 90% of the expected income from game sales. As mentioned elsewhere, this may not be sustainable if the price for buffalo changes greatly. Game introductions are expected to

commence in Year 1; meanwhile, it is not likely that the buffalo population will reach the desired number before Year 4 if they grow at 12% per annum.

The budget for the Nyathi Section will have to carry the cost of the choice of game introductions, and so the risk of not achieving the projected income (if game prices fall in real or even nominal terms) once a population has increased to a point that would allow removals. There is every likelihood that buffalo could be supplied from a disease-free population derived from ex-Kruger Park stock. If not, the number of buffalo required would not be available on the local market over a two- or even three-year period. This could delay tourism development in this section as well as dampen income generation from game in the future. The cost of black rhino assumes that the animals can be obtained for free from SANParks stock or from other conservation agencies. (The estimate in Table 4.2 is the cost for capture and translocation - about R15 000 per animal. The same assumption has been applied to all sections where black rhino could be introduced.) If rhino must be purchased the costs will increase. Even so, a market value is difficult to define in this context since donations from other conservation agencies are seen as a probability.

4.2.2. ANNUAL OPERATING EXPENSES

The operational expenses for Nyathi are relatively low since most staff can be drawn from the Addo Section. However, gate attendants will be required at the entry points. As mentioned earlier, if the Zuurberg road is not enclosed in the park, then the number of gate attendants can be reduced to 3, producing a savings of approximately R250 000 in salaries per annum. Other operational costs for Nyathi appear to be about R80 000 per annum for patrolling the 54-kilometre boundary fence, and general costs for vehicles and supplies.

4.2.3. INCOME

The income for the Nyathi Section will be derived from guided and more expensive tourism, with associated entrance fees and game sales making up the remainder. The total income is projected to be just over R5 million with game contributing R3.7 million. As indicated above, this may prove to be unrealistic due to the possibly inflated price currently paid by game farmers for buffalo, and a high level of demand that may not be sustained indefinitely.

The tourist accommodation in this section will be developed by the private sector. The total number of beds per facility is indicated along with expected performance in Table 5 (Appendix). Three sites are proposed for development. One site already tendered in the commercialisation process in 2000 consists of a development of 44 beds costing in excess of R12 million. Annual return to SANParks is expected to be just under R700 000 once operating at capacity. This product will be priced at about R900 per person per night, and the tariff would include accommodation, meals, game drives and extras. This development is tailored to the middle- or upper-end of the market.

Two other lodges will make up another 30 beds and should provide an expected annual return to SANParks of about R700 000. The total number of beds in the Nyathi Section is projected to be about 84, which should create approximately 100 permanent jobs. Total capital investment will be in the region of R23 million and this will be funded by the private sector.

4.2.4. SUMMARY

The annual expenses for the Nyathi concession are only about R520 000 while income is projected to be about R5 million once operating at capacity. Game sales accounts for about 70% of total income with buffalo sales constituting over 90% of the game income. (Once again, this assumption is heavily dependant on sustained demand in the market for disease-free buffalo.) The net return per hectare is just over R300. To achieve this SANParks would need to invest about R10 million in infrastructure, excluding game.

4.3. KABOEGA SECTION

The Kaboega Section presents the largest area and most diverse and rugged landscape of all sections within the GAENP. The rocky and mountainous terrain presents certain development limitations and in some ways restricts the ability of the section to generate income from tourism or game. However, the diversity of habitats present implies that this section has high biodiversity value. Expected development requirements, annual operational expenses and potential income for the Kaboega Section are discussed below and presented in Table 6 (Appendix).

It is proposed that the area should be managed as two units, namely Zuurberg and Kaboega (see Figure 1, Appendix). The Zuurberg unit borders the Nyathi Section along the Zuurberg road and includes about 21 000 hectares of forest, mountains and other habitat. It is anticipated that for the initial 10-year planning period the area need not be fenced and no additional game should be re-introduced. Instead, this portion of the GAENP can best offer wilderness-type experiences, in line with the rugged nature of the landscape. West of the Zuurberg unit is the Kaboega unit covering about 39 000 hectares; this area could be fenced in conjunction with the Darlington Dam Section.

4.3.1. CAPITAL COSTS

Land

A large area of land is still required to consolidate the core Kaboega Section, especially on the western and southern boundaries. It is expected that an additional 15 200 hectares will need to be acquired; eventually, this section could encompass an area of about 60 000 hectares. The purchase of some land needed for consolidation of the section has already been concluded; in total, acquisition of additional land may cost about R15.5 million.

Fencing

Not all areas of the Kaboega Section need to be fenced, but the major portion containing Big Five animals will require predator-proof fencing. This expected to cost

about R60 000 per kilometre, which is slightly more than for other sections due to the difficult terrain. The total fence cost is estimated to be in the region of R6.6 million. In addition, old fences will need to be removed at an estimated cost of R1.2 million.

Roads

The rugged nature of the terrain will make road construction expensive, and possibly inadvisable once environmental impacts are taken into account. For this reason the road network should be limited to 4x4 tracks (mostly for management use) but some could be available for 4x4 recreational use. The total costs for about 150 kilometres of tracks are estimated at about R2.5 million, with many of these on the fence line and some already existing, but in need of upgrading.

Buildings and other infrastructure

Some infrastructure is needed for game animals; this includes equipping three existing boreholes with pumps and pipes, and drilling one new borehole. Total cost is estimated at R21 000. Game-handling pens for the introduction and subsequent selling of game are also required; this has been estimated at R200 000.

Several existing buildings in the area could be used by SANParks to house staff, but these are old homesteads that will require some refurbishment. In addition, new units will be required and the total cost for providing staff accommodation is estimated at R618 000.

A new large entrance gate and two secondary gates will be required in the Kaboega Section along with nearby accommodation for staff. This is expected to cost about R500 000. Other support infrastructure needed for the gate areas and accommodation units includes electricity, water and communications; R100 000 has been budgeted for this.

Finally, removal of old houses and reclamation of roads and tracks has been costed at R400 000. This gives a total development expenditure of about R23.5 million for the Kaboega Section. This is relatively low per hectare as compared with other areas, especially considering that land acquisition accounts for over 60% of the expenditure.

Equipment

The Kaboega Section will be dependent on the Darlington Dam Section and to some extent the Addo Section for equipment. Therefore, the only additional requirement is a 4x4 vehicle costing R150 000.

Game

The Kaboega area currently has very little game. The introduction of nearly 2 000 head of game may cost in the region of R18.5 million. As previously discussed in regard to other sections, buffalo will comprise almost 60% of the cost. A list of species, number of animals needed to achieve 50% long-term carrying capacity, anticipated introduction costs, and expected income from eventual removals is presented in Table 4.3. The Kaboega Section appears to have potentially higher large mammal diversity than the

Addo and Nyathi sections due to a greater diversity of habitats. Once again, it is evident from the table that buffalo account for the largest portion of the introduction cost and a significant proportion of the possible income.

Table 4.3: Species to be stocked in the Kaboega Section, the numbers needed to achieve 50% of long-term carrying capacity, the expected cost of introductions and possible income from removals once at target population size.

Species	Numbers required to achieve 50% carrying capacity	Expected cost of introductions (Rand)	Total number after introductions	Potential annual removal value (Rand)
Buffalo	90	10 901 116	181	2 167 579
Plains zebra	92	147 613	185	20 297
Mountain zebra	185	1 254 710	369	221 419
Hippo	18	403 558	35	14 037
Red hartebeest	108	223 167	217	50 700
Mountain reedbuck	150	105 000	300	18 000
Warthog	23	8 183	47	1 403
Grysbok	34	41 053	68	8 211
Elephant	108	2 150 538	215	86 022
Eland	252	856 273	504	211 550
Ostrich	311	404 521	622	93 351
Black rhino	40	601 661	80	-
Kudu	117	163 172	233	34 966
Bushbuck	119	148 768	238	26 778
Grey rhebuck	260	312 000	520	70 200
Klipspringer	211	697 125	423	190 125
Lion	10	45 000	20	5 000
Spotted hyena	10	28 000	20	1 600
Wild dog	10	15 000	20	1 000
Cheetah	5	7 500	10	500
Total		R 18 513 958		R 3 222 736

The financial forecast assumes that game introductions will only commence once the boundary fence has been completed (see Table 6, Appendix) and this is not scheduled until some three years into the project. Development of the Kaboega Section has been phased for a number of reasons:

- Large numbers of the game species required are unlikely to be available in any one year;
- Implementing a programme of this nature requires necessary capacity to exist within the organisation, and this will take time to achieve;
- Logistical management is difficult on such a large scale.

Kaboega is seen as a section with lower income-generating potential and there are no existing commitments to concessionaires. Therefore, implementation of developments can be scheduled for a relatively later date.

4.3.2. ANNUAL OPERATIONAL EXPENDITURE

The annual operational expenditure for Kaboega is estimated to be just over R2 million once operating at capacity, which is equal to about R32 per hectare per annum. The most significant costs are for staff wages, which accounts for over 50% of the budget. Regular fence patrols will be necessary due the presence of lions and other dangerous game.

4.3.3. INCOME

Income from the Kaboega Section is relatively low per hectare, with game accounting for nearly 75% of the R4.4 million that is projected. Sale of buffalo will contribute significantly to this, but the species will only reach a target population size nearly 8 years after introducing a founding population (50% of the long-term carrying capacity). Income from tourism is split between several very different products. Flatter areas along the Sundays River are expected to provide a good Big Five game-viewing product. Here two or three privately funded and managed concessions could be marketed for more the expensive guided-tourism option. The total number of beds available in the area is expected to be about 60. This may provide more than 90% of the tourism income for this section; details of this option are presented in Table 7 (Appendix). The tourist facility would be similar to the product offered at Nyathi and the lodge in Addo; the tariff per bed is likely to be about R750 per person per night.

Other tourist products anticipated for this section are likely to be operated and developed by SANParks. The foundation for these products is already in place and includes a walking trail with huts to accommodate about 18 people per night. The hiking trail would initially require two huts and additional equipment, but the trail system could be extended as demand increases. All that would be required to develop this product are additional overnight rustic facilities and a trail linking them. Depending on how they are configured, trails can be half-day walks or those for several days' duration. Trails would be demarcated in the most inaccessible mountainous areas; since Big-Five game would not be expected in rugged terrain, the trails could be self-guided.

This would constitute a product for a niche market by appealing to the more energetic and adventurous visitor. It could be modeled on the highly successful Otter Trail in the Tsitsikamma area, although the two destinations offer very different landscapes. The projected income is a modest R22 000 per annum, but if thoughtfully developed and marketed the trail could prove more profitable.

Another product aims at a specialist market and caters for visitors who want to experience a 4x4 adventure trail. Existing tracks through the Zuurberg Mountains could be utilised by 4x4 vehicles. As in the case with the hiking trail, visitors could travel from

one overnight hut to another. The projected income is also modest at R80 000 per annum, but this could also grow if marketed well.

Development costs for hiking and 4x4 trails are not expected to be high since existing trails and tracks can be utilised. Development should be kept to a minimum: firstly, to reduce impacts on the environment, and, secondly, to reduce maintenance and management costs. Even so, the input could result in about 39 permanent jobs being created.

4.3.4. SUMMARY

The Kaboega Section of the GAENP can offer a unique range of wilderness products in line with the rugged nature of the Zuurberg topography. Development of infrastructure in this section should be contained due to likely high initial costs and the costs of ongoing maintenance. Developments will require careful planning to ensure that environmental damage does not occur and that the sense of wilderness is not compromised. About R26.8 million is required to consolidate the section and supply basic infrastructure, with only about R1.2 million of the total required from SANParks for tourism facilities.

4.4. DARLINGTON DAM SECTION

This section differs markedly from the rest of GAENP by vegetation, climate, and low rainfall that are characteristic of the Karoo. The area can present a landscape to tourists that is quite different from the savanna habitat typically found in most game reserves. A detailed breakdown of the expenses and income forecast for the Darlington Dam Section of the GAENP is presented in Table 8 (Appendix) and described in the sections below.

4.4.1. CAPITAL COSTS

Land

At least 17 000 hectares of land are required to consolidate the Darlington Dam Section. This may cost in the region of R23 million since some relatively productive agricultural land around the dam has added to the cost. Eventually the area should cover about 31 000 hectares making it the second largest of all the sections.

Fencing

The Darlington Dam Section is likely to require a predator-proof fence along its entire 85-kilometre perimeter. This is estimated to cost R55 000 per kilometre or a total of almost R4.7 million. Removal of existing fences is likely to increase this amount to approximately R5.3 million.

Roads

The tourism product planned for this area includes a public-access component and a self-drive game-viewing option. Good-quality roads suited to sedan-type vehicles will be required. It is proposed that 10 kilometres of sealed access road should be provided together with 80 kilometres of gravelled road. These are expected to cost

approximately R8 million. Management tracks will also be required, including a patrol road along the fence; 150 kilometres of tracks have been budgeted for at a cost of R1.5 million.

Buildings and other infrastructure

Some infrastructure currently exists in the Darlington Dam Section, but some additional buildings are needed. Because the section will also service the Kaboega Section, a ranger's house will be required and other houses will need to be refurbished, all at an estimated cost of R345 000. In addition, a workshop is needed here and bulk services must be supplied and upgraded, at a cost of R900 000. One large entrance gate is required due to the public-access road through the park and leading to the dam. The cost of gate structures and staff accommodation is estimated at R900 000. A small office complex has been costed at R150 000, including basic equipment.

Facilities will need to be developed to handle the introduction and later capture of surplus game, and several water points will need to be established; the cost of these facilities is estimated at R275 000.

Equipment

Equipment housed in this section will be required for use in the Kaboega Section as well. The total requirement is a 4x4 vehicle, a large tractor for pulling heavy loads, a boat with trailer for use on the dam, and some tools and machinery. The cost of equipment is budgeted at R480 000.

Game

The Darlington Dam Section currently contains very little game and a large introduction programme will be required. This area also has a higher potential for species diversity than do the thicket areas in Addo. The number of animals to be introduced, including the expected costs of stocking to 50% of final carrying capacity, and their estimated removal value once at capacity is presented in Table 4.4.

Table 4.4: Game species in the Darlington Dam Section of the GAENP, the number of animals needed to achieve 50% of long-term carrying capacity, expected cost of introductions, and potential income from removals once populations have reached their target size.

Species	Estimated current population number	Estimated cost of introductions (Rand)	Total number after introductions	Potential annual removal value (Rand)
Buffalo	69	8 280 000	137	1 644 632
Plains zebra	140	224 000	280	30 800
Mountain zebra	70	476 000	140	84 000
Hippo	13	306 196	27	10 650
Red hartebeest	140	288 257	280	65 488
Mountain reedbeek	155	108 500	310	18 600
Springbok	705	317 363	1,411	42 315
Elephant	10	198 718	20	7 949
Eland	100	339 098	199	83 777
Ostrich	256	332 261	511	76 676
Black rhino	11	165 546	22	-
Kudu	198	276 862	396	59 328
Grey rhebuck	80	96 577	161	21 730
Klipspringer	73	239 766	145	65 391
Lion	13	56 250	25	6 250
Spotted hyena	13	35 000	25	2 000
Wild dog	18	26 250	35	1 750
Cheetah	20	30 000	40	2 000
Total		R 11 787 770		R 2 223 334

The total value of game to be introduced to the Darlington Dam Section is R12.7 million; as expected, buffalo comprise a significant proportion of this cost, but also can contribute almost 70% to the eventual annual income generated from game sales. If game introductions to this section commence only in Year 4, and are completed by Year 6, the target buffalo population cannot be attained before Year 12. Thus, the income from game indicated in Year 10, Table 6 (Appendix), cannot actually be achieved as the population will not have reached carrying capacity, yet the figure is presented to illustrate what a long-term final income is expected to be.

4.4.2. ANNUAL OPERATIONAL EXPENSES

The long-term operating budget for the Darlington Dam section is estimated at just under R2 million with staff wages accounting for about 40% of the expenditure. This is a relatively low percentage considering that a road network for tourist use will add significantly to the overall management costs each year.

4.4.3. INCOME

Income generated from the Darlington Dam Section is dominated by game sales, which contribute over 60% of income. The remainder will be earned from entry fees and income from operations. It is anticipated that SANParks will develop a 75-bed camp with 10 camping/caravan sites. Similar to the self-drive experience currently offered in Addo National Park, the focus is on supplying affordable accommodation to a wide range of park users, including access for day visitors. The camp is expected to cost SANParks approximately R7.6 million from which an annual net return to SANParks of just under R1.1 million is expected. This would include any operations outsourced to private operators such as open-vehicle, game-viewing drives. Table 9 (Appendix) provides a breakdown of the investments, the size of the camps, anticipated tariffs and occupancies, turnover and net return to SANParks, as well as the cost of related infrastructure. Note from the table that the concession is applicable to the concessionaires, while the profit percentage is applicable to SANParks camps. Likewise, the concession fees are earned from concessionaires, while the income to SANParks is applicable to SANParks camps and represents the profit after costs.

In addition to the SANParks facility, the area is considered large enough to accommodate a private concessionaire who would have the rights to operate a 24 to 30-bed facility. The net return to SANParks, based on current agreements, could be about R200 000 per annum. The total number of direct jobs generated by these facilities is expected to be about 41. The facilities are expected to attract about 25 000 visitors per annum.

4.4.4. SUMMARY

The Darlington Dam Section provides an important public-access facility in the GAENP. The impact of this on the local area could be significant if the product is able to attract tourists to the area to the extent AENP has done, and this could have positive economic effects on the surrounding communities. Development and management of the section will impact the overall profitability of the area as its net annual return to SANParks is about R2 million. However, a large proportion of this income comprises revenue from buffalo sales so the risk of not achieving this may be high. This section will also require the most capital investment by SANParks with about R41.5 million predominantly required for basic 'conservation infrastructure' and a further R7.5 million for tourism facilities developed by SANParks. This high requirement for capital expenditure is not surprising since this is probably the least developed section of the GAENP.

4.5. WOODY CAPE SECTION

The Woody Cape Section is an atypical area of the GAENP in that it incorporates the coastal environment, islands in Algoa Bay, coastal forest, grasslands and dunefields. The area is fragmented and there are several isolated patches of indigenous forest. Much of the surrounding area is intensively cultivated and managed as dairy farms, and most of the original indigenous forest has been cut down and transformed into pasture. The coastal environment consists predominantly of sandy beaches with extensive

dunefields. The islands comprise two clusters of small islands that are important seabird nesting sites as well as house a seal rookery. There is a lighthouse on one of the islands.

4.5.1. CAPITAL COSTS

Land

The highest priority land purchase for the Woody Cape Section is the extreme western portion at the Sundays River mouth where approximately 1 500 hectares needs to be added to the GAENP to secure the important estuary area and serve as an access point to the coast. This land is estimated to cost about R2.5 million. Detailed development requirements together with operational costs and projected income are presented in Table 10 (Appendix).

Fencing

All the forest patches require new fencing as the old material, where it exists, is rusted and in need of replacement. The fragmented nature of the area means that the perimeter fence will require long distances relative to the size of the area, but fortunately the coastal section will not require fencing. Fencing is required merely to demarcate the area and keep domestic stock out as opposed to keeping game in. A normal six-strand stock fence will probably be sufficient and will cost R7 500 per kilometre; adding R500 per kilometre to retrieve old fence material, gives an estimated total cost of R1.3 million.

Roads

Roads are not an important capital cost in this area, in fact roads should be kept to a minimum due to their likely negative impact on the biologically important and rare-type of coastal forest. About 3 kilometres of surface road will be required at the Sundays River mouth for sedan vehicles to access, costing about R200 000. Management tracks may be required in some areas, especially along the perimeter, and this is estimated to cost R600 000.

Buildings and other infrastructure

The Woody Cape Section generally has very good infrastructure although it has been neglected in recent times; substantial refurbishment of existing infrastructure is estimated to cost about R400 000. Entrance gates will be needed at either end of the coastal section, one at the Sundays River mouth and the other near Canon Rocks. These structures and nearby staff accommodation are budgeted at R200 000.

Equipment

It is unclear at this stage what will happen to the existing equipment at the Woody Cape Nature Reserve since it is owned and administered by the Provincial Nature Conservation Department. Some new equipment will be required, including two 4x4 vehicles, a tractor, a boat with trailer and some workshop equipment; this budget is estimated at R650 000. It is not envisaged that game will be introduced into the area. If the section expands as some dairy farms are incorporated into the park, there may be opportunity to introduce game, but this is not considered an option in the baseline scenario.

4.5.2. ANNUAL OPERATING EXPENDITURE

Management of the Woody Cape Section will require special skills associated with an understanding of the coastal environment. There may also be a need to locate staff on the islands and this would increase costs. Therefore, about 35 staff are budgeted for, with six employed at entrance gates. Total annual expenditure for staff is estimated at R1.3 million. In addition, alien plant control and other operating costs are budgeted at about R1.4 million.

4.5.3. INCOME

Income generation in the Woody Cape Section will be confined to tourism activities, rather than game. The area currently has low visitor numbers; visitors are mainly confined to the Alexandria hiking trail and short forest walks, with limited income from controlled beach access. Beach access however is controlled to some extent by private landowners adjacent to the coast. It is felt that income could increase if control facilities are improved and upgraded.

It is difficult to predict what income may be derived from the coastal or forest environments since there is very little local activity at present. With the establishment of a resort facility, such as provided on the KwaZulu-Natal coast at Cape Vidal or Mapelane, visitor use could increase significantly as well as income from associated activities. This could be based on regulated recreational fishing, as is the KwaZulu-Natal resorts. A model is provided for such a resort, established by SANParks, at the Sundays River mouth, with up to 100 beds at a capital cost of about R7 million (Table 11, Appendix). This could generate net income to SANParks of just under R1 million per annum. Beach permits for 4x4 vehicles could generate an additional R90 000. These figures are based on the conservative assumption of charging R100 per vehicle (KwaZulu-Natal Wildlife charge R130 per permit) for a weekly permit, and allowing only 83 vehicles per month. Note from the table that the concession percentage is applicable to the concessionaires, while the profit percentage is applicable to SANParks camps. Likewise, the concession fees are earned from concessionaires, while income to SANParks is from SANParks camps and represents the profit after costs.

Management of the trail would continue to be conducted from the offices at Woody Cape; however, it is possible that the route could be expanded to accommodate more hikers (some on the same route with perhaps an additional route further west of the section). Currently, there is an option to accommodate two groups at once on the trail, but some upgrading of facilities and trails would be required. Provision has been made for R360 000 to refurbish the huts and increase the trail to accommodate 36 people at a time. Once operated by SANParks, net income could be approximately R40 000 per annum at a cost of R50 per person per night. This is an affordable option that meets the objectives of making the GAENP accessible to a wide market.

Finally, there is an option for a concessionaire to build a private, more-exclusive facility near the coast, that also offers walks in the forest and along the coast, sea fishing, boat trips to the islands and other forms of coastal recreation. A suitable site would have to

be identified, but in discussions with park management it was felt that several sites could be identified. The concession fee is a modest 5%, lower than the other areas since the tourist market may not be as willing to pay for this opportunity to the extent that it does in 'Big Five' areas. The total number of beds is set at 24, but this could be higher if environmental impacts are managed. It may be that a larger facility of up to 100 beds would prove more viable for a private operator. The income to SANParks for 24 beds is estimated at about R100 000.

4.5.4. SUMMARY

The total income derived from the Woody Cape Section of the GAENP is estimated at just under R1.2 million; development costs to realise this are estimated at about R13 million. The largest proportion of this expenditure is required to build a SANParks-operated camp, which provides 80% of potential income. However, the projected income would be insufficient to cover the proposed operational expenses of the section and an annual short fall of about R1.7 million is predicted. This deficit could be reduced by reducing the alien plant-control budget (if at all possible), if SANParks set their goal at recovering costs.

4.6. COMBINED SECTIONS OF THE GAENP

The five geographical sections of the GAENP are: Woody Cape, Addo, Nyathi, Kaboega and Darlington Dam (Table 12, Appendix). The following discussion refers to a baseline scenario for the consolidated area, as envisaged by SANParks.

4.6.1. CAPITAL COSTS

Land

The total area is expected to cover approximately 156 000 hectares. Of this, approximately 45 000 hectares have not yet been incorporated. Some of this land has been purchased, and acquisition of some properties has been agreed to and transfer is in progress, while other properties are at an advanced stage of negotiation. Negotiation and acquisition of about 25% of the land identified as desirable for incorporation still needs to take place. The cost of acquiring land identified for inclusion in the GAENP represents an investment of about R56 million. It is expected that all land acquisitions will be completed within four years from the date of the project's commencement. Purchase prices are given as most likely estimates, but it is possible that landowners who perceive an increased demand by SANParks may attempt to increase their sale prices. It is difficult to predict prices in a free market system and land prices could increase by 10 to 15% from original estimates.

Fencing

The total length of fence required to contain the area in terms of the management objectives for each section is estimated at about 675 kilometres of which approximately 175 kilometres already exists. The total cost of fencing the park is estimated to be almost R21 million, with an additional provision of R3 million for removing existing internal or old perimeter fencing. The timing of the fence erection will broadly follow the

land acquisition programme and should be completed within four years, however the Kaboega and Darlington Dam sections are regarded as low priority and can be attended to in time. The introduction of major game is dependent on perimeter game fencing being completed before commencement.

Roads

Road construction costs account for almost R25 million of capital expenditure, of which 24 kilometres of surfaced sealed road will be provided, along with nearly 275 kilometres of surfaced secondary road (of which 75 kilometres already exist), and over 500 kilometres of management tracks and 4x4 roads needed for fence patrols, internal management and recreation use.

Building and other infrastructure

Buildings for conservation management staff account for R2 million. The greatest portion of this amount is needed to refurbish existing buildings to bring them in line with standards acceptable to SANParks. A further R2.5 million is required for entrance gates and associated staff accommodation. Bulk infrastructure to support the above accommodation and entrance gates is estimated to cost R1.4 million; this includes installation of water, electricity, telephones, radios, roads, sewerage, etc. Provision for offices accounts for just under R500 000.

Removal of old buildings, and reclaiming roads, tracks and croplands, has been very conservatively estimated at R1.5 million. Discussions with park management suggest that a figure up to five times higher would be more realistic since the costs of reclaiming lands in the thicket can be up to R5 000 per hectare. We present the more conservative figure, believing this is more realistic within budgetary constraints.

Finally, a provision for Environmental Impact Assessments (EIAs) has been included as most capital work will require such a study. It may be more cost-effective to complete EIAs in batches rather than on a project-by-project basis, thus a single provision has been made as opposed to making separate provisions for each project.

Equipment

Equipment requirements have been assessed as additional equipment that will be needed over and above what is currently in service at AENP. The most important requirement is for 4x4s, with tractors and one truck also considered essential. A boat is required at both the Woody Cape and Darlington Dam sections, while some areas will require workshop equipment and tools. The total budget for equipment amounts to about R1.8 million.

4.6.2. ANNUAL OPERATIONAL COSTS AND STAFF WAGES

The total staff requirement for the GAENP is estimated at 162, of which about 130 would be permanent appointments and the remainder casual labour required at various times throughout the year. The budget for staff salaries is estimated at R5.2 million per annum. A further R276 000 is budgeted for patrolling fences, which will be especially necessary in sections containing Big-Five species. Alien plant control has been

allocated R2.5 million per annum. This operation has the potential for creating many jobs; most funding for it in the past has been supplied by DWAF or from Poverty Relief budgets.

Finally, about R3.5 million per annum will be required for vehicles, tools and equipment, electricity, water, other maintenance and office costs. The projected long-term operating budget per annum is just over R12.5 million, and this will be required from year 6 - once all development is completed.

4.6.3. INCOME

The annual income to the GAENP is expected to be almost R25 million. This level of income could be attained by Year 10, or once the park has completed all developments and is operating at capacity, and game numbers have reached equilibrium. It is expected that almost 180 000 visitors will enter the park each year and generate over R1.5 million in entrance fees. (This figure is conservative since the number of beds may increase to over 722, whereas current estimates are to provide between 200 and 250 beds. Thus, the assumption has been made that a three-fold increase in beds will only double the number of visitors.) Predictions regarding income from entrance fees and accommodation are difficult because the number of 'campsite' beds and day visitors are speculative.

It is expected that income from the visitors using the facilities, operated both privately and by SANParks will generate R9 million in income to the park, or just under R3 million short of the annual expected expenditure. The annual turnover of all the operations should be in excess of R59 million, and the total number of jobs within the tourism component will be about 360, which excludes construction-related jobs. The private sector can be expected to invest R75 million if the anticipated products are commercialised, and SANParks will need to invest an additional R20 million in the tourism products required in the different sections of the GAENP.

Income generated from game is expected to yield a further R13.8 million, but as mentioned previously buffalo may account for over 80% of this income. Thus, if the price of buffalo were to fall to R60 000 per head, income would fall to R8 million. Even on the strength of a very conservative analysis, it is highly probable that annual costs will be covered by annual income.

For GAENP to attain the income contained in this baseline scenario, above the current status quo, the following capital investments are required:

- R115 million in land, fencing, roads, buildings and other capital works;
- R1.8 in equipment;
- R51 million for game;
- R95 million in tourism products, of which R75 million can be provided by the private sector and R20 million by SANParks.

The overall financial viability of this plan is difficult to assess using conventional financial efficiency measures such as Internal Rate of Return (IRR), Net Present Value (NPV) or even return on investment as all the costs of the project cannot be captured. Many have already been committed and it is not possible to re-evaluate these at this stage. In addition to use an IRR or NPV for this project would require a final value of the project at the end of the evaluation period. This is difficult to achieve in this instance as the final value of game and value for land is impossible to predict. For many projects this is not important, but for a project of this nature the value may be predominantly captured at the end. However past experience has shown that both these factors (land and game) have contributed enormously to the final value of these projects. It may however arise that these fall. Ideally an economic IRR or NPV should be undertaken which accounts for all the costs and benefits, which a project such as this will bring. This, however, is an enormous task and beyond the scope of this study. Few studies have been undertaken to place a value on Biodiversity and this is perhaps the biggest value, which unfortunately cannot be accounted for in the IRR estimate.

Game

The GAENP will require additional game to boost current populations to a point enabling them to reach their desired maximum numbers within a 5- to a maximum 18- year period (for elephant and rhino). Initial introductions are targeted at 50% of the long-term recommended carrying capacity for each species. Table 13 (Appendix) illustrates the number of animals that will need to be introduced to achieve 50%, 60% and 70% of long-term carrying capacity. These calculations assume that animals are currently evenly distributed over the various sections of the GAENP, although the Addo Section presently contains most of the game.

Table 13 (Appendix) also lists the species suited to each section of the park and the target maximum carrying capacity. This is determined by using the number of large stock units (LSU) per animal for each species, allocating a stocking rate for each area and then allocating the number of LSUs per feeder class according the local conditions in each section. Each species is then allocated a percentage of the feeder class to which they have been allocated. In this way the numbers of each species can be set according to the specific conditions that occur in each area. The stocking rate (ha/LSU) for each area, the feeder class allocation, the LSUs per animal and the species allocation within each feeder class were obtained from SANParks.

The expected purchase price or capture cost per animal is presented in Table 13 (Appendix). The purchase price per animal assumes the cost of the animal *in situ*, (i.e. before capture, transport and capture mortality, etc.). The capture price per animal includes the cost of capturing game and transporting them to a new destination. This is likely to vary significantly depending how far an animal has to be transported and how difficult it is to capture. These figures were obtained from game-capture operators and assume the cheapest method of capture (assuming it is humane and losses are minimal) and takes into account an average transport distance of 500 kilometres to deliver the captured animals. These estimates must be seen as averages and may increase as the variables change.

An expected annual rate of natural increase in game is also presented. This is the likely rate at which the animals will increase from year to year assuming a population of normal age and sex structure as would occur in the wild. If this is not achieved then growth rates will differ. These calculations assume that some losses will occur from predation and normal mortality, but the projections are annually achievable targets under those conditions. The annual rate of increase is used to calculate the annual removal numbers for each species per year and the expected income. Income figures assume that the cost of purchase will be recorded from sale (excluding the capture fees).

The estimated introduction cost and the income from game removals can be calculated using Table 13 (Appendix). The prices may vary over time and the actual income therefore may be more or less than expected. It must be remembered that only a certain number of select species would be available for sale each year. Purchasing too many animals may drive up prices; for this reason, game purchases have been phased for the different sections. Equally, prices could fall and this would affect income. The target buffalo population is set at 980 animals, and if 10% of the population is sold annually nearly 100 animals will enter the market; this will exceed the total number available on the market at present and may lower the current price commanded by buffalo. A counter argument, based on experience with white rhino over the past 30 years, suggests that an increased supply of buffalo will merely translate into increased demand. Whatever the truth may be, a long-term prediction for game values is not impossible. However, for extremely expensive species such as buffalo it is probably unlikely that the current price will be sustained in the long-term as they become more abundant.

No price has been set for black rhino because these animals are rarely traded, except at the annual KwaZulu-Natal Wildlife Game Auction. It is assumed that black rhino will be obtained primarily to help ensure the protection of the species and swapped or donated for other Red Data species. Their slow reproductive and growth rates will not impact on park income over the 10-year model period, in any event, as they are only likely to reach their target population after the conclusion of the 10-year planning period.

Lion numbers have been set according to SANParks guidelines as indicated in a draft report by Novellie (1998), while projected populations for other predators were set from inputs by SANParks staff.

Funding

It was assumed throughout the modelling exercise that the funding for most development could be supplied by internal sources within SANParks. However, it may be necessary to obtain external funding for some of the anticipated developments. The amounts required for different categories of development are presented in Table 4.6. This exercise considers each development separately and adds the total capital required. Each asset is expected to have a different funding regime, and it may be

possible to fund some over longer periods while others may require shorter repayment periods. Equally, the expected interest rate may vary over time.

It may be possible to obtain funding from sources within South Africa, for example the Development Bank of Southern Africa (DBSA) that may offer lower interest rates. The figures presented in Table 4.6 are the total funding requirements for different assets. The model assumes that funding will be required for all sections in Year 1, although realistically, some sections may require funding sooner and others later. However, the net effect will be similar although timing may vary in several instances.

An interest rate of 7.5% has been selected for all projects. Although quite low it may be achievable for this project through state institutions or international bodies if it is motivated on good grounds (e.g. the environmental and social benefits of the project). The model was also run at 10, 12 and 15% interest and the repayments for these rates were R25 851 327, R27 695 692 and R30 486 577, respectively.

Table 4.6: A summary of the expected development costs of different categories of expenses with a typical repayment period and interest rate shown. The total annual repayment for the payment term is also presented.

	Loan term (years)	Initial expenditure (loan, in Rand)	Annual repayments at 7.5% interest (Rand)
Land	20	56 230 950	-5 130 993
Fencing	10	21 662 500	-2 021 443
Roads	5	25 045 000	-5 758 363
Water	5	136 000	-31 269
Game facilities	5	700 000	-160 944
Game	10	50 595 360	-7 073 255
Buildings	15	7 363 000	-765 400
Reclamation, EIAs, etc.	5	5 202 500	-1 196 162
Tourism developments	20	19 860 000	-693 489
Equipment	5	2 240 000	-751 841
Total		R 189 035 310	R -23 583 160

At current estimates, the annual repayment (including interest and capital) for all expense categories totals approximately R23 million. Game, land and roads combined account for a large proportion of this amount, or about R17 million in repayments. It is apparent that the project will not be able to sustain a repayment schedule of this magnitude, especially in the early developmental years. At best, the project could hope to cover about R10 million in repayments per annum, but this would be feasible only after a period of about 10 years.

In working towards this target income, an operational deficit of approximately R18 million will accumulate in the first five years of development. This will need to be financed along with interest on the initial capital that is borrowed, and this would also have to be capitalised onto the loan, which would increase the requirement for revenue even further. These two factors would effectively escalate the required repayments further beyond the ability of this project's finances. To achieve success, the project will likely need external funding for much of its developments – a conclusion supported by the negative IRR value indicated in an earlier section of this report.

There may be a good case to argue that all development costs, except those for tourism and some roads, should be funded by SANParks, either directly or indirectly. SANParks has already funded a large amount for land acquisition from internal sources and from donors. This strategy could be used for other categories. SANParks' tourism operations, the roads associated with tourists, and infrastructure required for tourism such as entry gates could well be financed from other funding sources. The repayments on these components would amount to about R6 million per annum. This would re-direct capital to other conservation projects within SANParks. This perhaps stresses the need to attract the private sector to finance as many functions as possible within the GAENP.

5. ALTERNATIVE SCENARIOS

The baseline scenario is presented (above), as the one believed to reflect the most likely situation for GAENP, assuming that funding can be found and outside financing for most of the developments will not be required. It is apparent from the model that costs will increase as more land is added to the GAENP, yet it is essential for SANParks to acquire the land to achieve biodiversity conservation goals. In another sense, although additional land would equate to a greater and more effective conservation of biodiversity, it is also possible that there could be diminishing 'biodiversity' returns as more land is added, depending on which biomes were selected. SANParks should carefully examine the areas scheduled for acquisition to ensure that the biodiversity conservation value is optimised.

The largest cost component of the baseline scenario appears to be land acquisition (see Table 4.6). Land that forms part of the initial AENP and the ZNP has not been included in the current valuation for expansion. Other significant costs include game purchases, roads, the perimeter game fence and tourism developments. All of these items could be paid for by the private sector if private land is incorporated. As the GAENP increases in size, assuming that its boundaries are not significantly irregular, the cost of fencing per hectare for the entire park decreases. If the fencing were to be erected on private land then the entire cost, or a large portion, could be carried by the private landowner. But in order to minimise costs and take advantage of these fencing advantages, it is important that the perimeter fence is erected only once. A progressive expansion of the park, that involves the construction of a game fence, removal and re-alignment once additional properties are added, would prove more costly.

Alternative models to acquiring land for biodiversity conservation could involve partnerships with the private sector. A private/public partnership would achieve several important goals and would assist SANParks with containing their costs while at the same time increasing the park's biodiversity value. If private land is incorporated into GAENP, it will probably be designated as a Schedule 2 national park. If this were done under the criteria contained in the ecotourism scenario report then positive spin-offs for SANParks would result. Some of these benefits would include the following:

- Reduced capital costs for fencing as the perimeter would now be on private land;
- Reduced costs for fence maintenance;
- A larger area for game to traverse and therefore a more viable population for genetic sustainability;
- Reduced management costs for the overall area as the private sector would share some of these costs; and
- Opportunities for diversifying the tourism products.

Private land incorporation may lead to tourism products that compete with products in the park, including those both owned and operated by SANParks or by their concessionaires. This may improve the overall attractiveness of the area and thereby improve local development opportunities, or it could create an oversupply situation with consequent negative results. At this stage, the ultimate effect of extensive private land is not possible to predict.

The opportunity to carry out hunting operations would diversify the products available, although SANParks does not allow this activity within Schedule 1 national parks. Hunting can set a high economic value on a selection of the game population, namely males, usually not sought after in the game park industry. Trophy hunters are usually interested in larger, older male animals, especially species where horn length or body size is important, but these specimens usually present a significant challenge to any game capture team.

Each section of the proposed park has been considered separately in terms of visitor forecasts and alternative land expansion possibilities. The baseline scenario described for each section, is regarded as the most likely, in the opinion of the author.

Generally a bed-occupancy of 60% has been forecast for most park facilities as a rate that can be realistically attained in the long-term. Increasing the occupancy rate to >70% may be achievable for short periods, but probably cannot be sustained in the long term. Possibly, as demand increases, new facilities could be built or, alternatively, achieved occupancy rates per bed per night will naturally increase. SANParks has stated their policy is to make facilities accessible to as wide a cross section of visitors as possible. Meanwhile, increasing occupancy rates is not a simple exercise of adding more beds, as park infrastructure must increase to absorb extra visitors.

5.1. TOURISM INCOME

The baseline scenario was manipulated to increase and decrease the bed occupancy by 10%, 20% and 30% from the 60% baseline rate. The projected results for the entire GAENP facilities are presented in Table 5.1.

Table 5.1: The effect of increasing and decreasing the bed occupancy rate by 10%, 20% and 30% on the number of guests, total turnover from tourism and total income to SANParks per annum.

Change in occupancy (from 60%)	Change in number of visitors	Change in gross turnover (Rand)	Change in income earned by SANParks (Rand)
+ 10%	5 265	5 932 500	907 758
+ 20%	10 530	11 865 162	1 815 162
+ 30%	15 796	17 797 743	2 724 043
- 10%	-5 265	-5 932 500	-907 758
- 20%	-10 530	-11 865 162	-1 815 162
- 30%	-15 796	-17 797 743	-2 724 043

Increasing the occupancy in all facilities by 10% would increase the number of visitors to the GAENP by approximately 5 200, with total income earned by SANParks just over R900 000. This is a likely scenario that could be accommodated without extensions to the road network or other infrastructure. A further increase of 20% would simply double the increase and increasing to 30% would triple the figure. Likewise, a decrease in visitor numbers would have a similar effect but in the opposite direction. An increase of 20% is probably the maximum that could be expected, while 30% would not be likely to be sustainable over the long-term.

5.2. GEOGRAPHICAL AREAS

5.2.1. WOODY CAPE

The Woody Cape has two important tourism and biodiversity attractions, namely the coastline and the coastal hinterland comprised predominantly of indigenous forest. This forest is a highly significant habitat from a biodiversity conservation perspective as it is one of the most threatened habitats in South Africa. It also has established tourism appeal. The area of the planning domain in the Woody Cape Section covers approximately 65 000 hectares, of which approximately 20 000 hectares are conserved at present, excluding the marine reserve. The remaining 45 000 hectares are predominantly used for agriculture, with a significant proportion used for dairy farming. This land use has resulted in significant removal or modification of the natural vegetation – to the extent that restoration, if possible, to forest or coastal grassland would exceed human lifetime. However, a number of forest patches remain on privately owned land, could be included in conservation efforts to link them. Consolidation could be achieved by purchasing land or through conservancy agreements that allow

SANParks to manage important forest and grassland habitats. Purchasing all the land in the entire area that contains indigenous forest and grassland could cost upwards of R90 million.

Farms often encompass developed pieces of agricultural land interspersed by small forest patches. Priority could be given to purchasing the largest patches and linking them and so improve conservation value. Alternatively, SANParks could explore the option of leasing forest areas from landowners in terms of long-term leases. This would restrict the impact that landowners have on the forests, but at the end of the lease there would be no guarantee of the landowner's intentions. As a conservation tool, a leasing option would only be appropriate in the short to medium term. Also, SANParks could lease the land with an option to purchase when funds become available.

Any one of these alternatives will, at best, serve to conserve existing forest patches and hopefully reduce further losses.

The natural beauty of the Woody Cape coastline and the Alexandria forest and coastal dunes offer the best tourist attractions in this section. Tourism opportunities could be extended to include the establishment of a large holiday resort incorporating a golf course and other outdoor recreation activities such as horse riding, mountain bike trails, walks and coastal activities. Access to the Big Five in the Addo section could be used as a negotiating tool by SANParks to gain control or ownership of the land management of the resort area. A resort would need to afford the large land purchase costs that would be necessary to consolidate this section. Further tourism development will generate economic activity and change land use from agriculture to ecotourism but should include guarantees for sound land management as negotiated between SANParks and the resort developers.

Agricultural productivity in the area and current levels of investment on farms are high. If land use were to change, then the extent of disruption will be determined by the degree that farming activities are altered. Taking productive agricultural land out of production and allocating it to conservation may be socially and economically inadvisable. Tourism on a large scale could compensate, but is unlikely to be viable over the whole area. It is probably most suitable to pursue a combination of strategies for this section, including purchasing important forest patches, improving the conservation status of this important biodiversity region (through conservancies or other management agreements), and/or initiating tourism investment and management.

5.2.2. ADDO

Here, the proposed area includes an additional 21 500 hectares in addition to the area already designated as the Addo section. The piece of land to the west of the Addo section near the Sundays River is probably not suited for incorporation as it includes irrigated land and orchards; rather it may be possible to incorporate land to the east extending as far as the N10 road. Some of the land has been cleared of succulent thicket but large areas are still covered by natural thicket.

SANParks could purchase these properties and include them into the GAENP as Schedule 1 national park. The cost for purchasing an additional 15 000 hectares is likely to be between R22.5 million and R19.5 million.

Several options exist for this area. The tourism income opportunities would be an extension of those proposed in Table 1 (Appendix). Higher income could be expected from the 'concession' model involving more exclusive tourism, while lower income would be expected if SANParks pursued the model described in Table 4 of Specialist Report no. 11. The number of visitor days to achieve this income would be about 35 000 per annum, for SANParks affordable tourism option, while the more expensive option would require about 20 000 visitor days per year.

Private landowners here could also incorporate their land while still maintaining ownership, as described elsewhere. Newly acquired land could possibly be proclaimed as a Schedule 2 national park, or an agreement could be signed between the landowner/s and SANParks that would regulate use of land and game. Landowners could be given a wider range of options to pursue various forms of tourism ventures, such as bed and breakfast, lodges or outdoor adventure, etc. Hunting could also be considered depending on agreements with SANParks. Hunting by foreign hunters would be necessarily limited to a small percentage of game, while local hunting for 'biltong' exists as a large market. These activities could provide good returns to the landowner.

This model would give added value to landowners in terms of projected income earned from the game. Landowners could add value to game by utilising it through hunting, and this could be applicable to most species with the exception of buffalo and black rhino. Landowners could purchase some of the game allocated for annual removal by SANParks, offering it to hunters on their land. They would benefit financially by adding a margin over and above the fee paid to SANParks. For some individual animals a trophy fee could be added and the processing of meat, overnight accommodation, catering and other activities would generate income.

In this way some of the private land could act as a dispersal sink from which excess game would be removed as it moved into these areas. It is unlikely that the entire annual game quota in the SANParks controlled area could be removed in this manner since there would be a limit to game movements. But, depending on the amount of private land and its location relative to the GAENP, a significant proportion of the parks' excess game could be sold in this manner. Hunting has the advantage of removing males from the population as capture teams and purchasers of live game usually prefer populations with a high proportion of young animals or females. Each addition of land would increase the overall game carrying capacity and genetic viability, and therefore the total annual numbers that could be removed.

A possible quota of animals that could be made available for hunting (originating in the Addo section, but hunted on neighbouring properties) is presented in Table 5.2a. This does not include game species where live sales command a higher price, and it assumes that 40% of the remaining game removal quota would be allocated to private

land. In addition to the numbers listed, game produced on private land has not been taken into account. The number of animals on private land would probably be in proportion to the amount removed from the SANParks area on a per hectare basis.

A certain percentage of the surplus game could be sold as part of a trophy-hunting package, at higher prices for good-quality animals. Table 8 of Specialist Report No. 11, gave an estimate of what the hunter might pay, including commissions, mark-ups, etc, while figures in Table 5.2a are an estimate of what a landowner could expect to charge a professional hunter, or an agent (i.e. profit after costs).

Table 5.2a: Species, number of animals, and price per animal offered for hunting on private land, originating from game populations in the Addo Section.

Species	Average price (Rand)	Number	Income (Rand)
Plains zebra	2 300	2	4 600
Red hartebeest	2 600	10	26 000
Warthog	250	3	750
Elephant	20 000	8	160 000
Eland	5 000	19	95 000
Ostrich	1 000	19	19 000
Kudu	3 000	24	72 000
Bushbuck	1 000	10	10 000
Total			R 387 350

5.2.3. NYATHI

Opportunity for Big-Five game viewing (rhino, buffalo, lion, leopard and elephant) is planned for the Nyathi Section of the park.

The area for consideration includes an additional 26 000 hectares to the north and east, and a smaller portion to the west of the current Nyathi Section. The area to the east and west would lend itself to additional concessioning relating to Big-Five tourism. These two areas are relatively small and would add little value on their own, but combined they would increase options available to concessionaires.

The area further north is more mountainous and rugged, and the extreme northern area falls within the Karoo. Options for the northern portion could include a combination of game viewing in the Karoo and hiking trails in the mountain areas.

If SANParks were to purchase these areas, the expected cost would be in the region of R40 million. As with the Addo Section, SANParks could also enter into partnerships with private landowners and jointly manage and share wildlife resources in the area. Hunting

would be a suitable option in the Karoo. However, the area close to the current concession and the mountainous areas are less suitable for hunting.

5.2.4. KABOEGA AND DARLINGTON DAM SECTIONS

The Kaboega and Darlington Dam sections are considered together here since they present similar tourist opportunities. The planning domain incorporates a large area of about 135 000 hectares that is an addition to the 91 000 hectares of these two sections already considered in the baseline scenario. Most of the additional land lies to the north and west of the Kaboega Section and west of the Darlington Dam Section. The major portion of land to the south has already been incorporated in the baseline scenario, excepting a small section near the Nyathi Section. Several landowners in this region are interested in forming a conservancy and incorporating their properties into the GAENP. Incorporation is seen as a desirable option and offers several advantages to landowners who wish to pursue tourism, as the area coincides with a well-established tourism node. The Zuurberg Inn, SANParks' current Addo rest camp, and other B&B establishments already operate here and the area is well situated to capture additional tourists.

North of the Zuurberg Mountains, on land that forms part of the Karoo, the best form of land use may be Big Five game-related activities. These activities could include photographic safaris, either self-drive or guided tours, or walking, hiking and even hunting. Small stock farming is the dominant type of agriculture in the region; rainfall is low but with high variability in the amount of precipitation received. Because small stock farming is subjected to wide price fluctuations in the price of both stock and products, wildlife utilisation may prove to be a better form of land use in this region. One landowner has already expressed interest in contributing his large tract to a conservancy or included as part of a contractual national park. Options for incorporation would depend on the needs and intentions of landowners.

Hunting is again an option here since a wide range of species will be present (Table 5.2b). The projections assume that 20% of the annual game off-take from the Kaboega and Darlington Dam sections could be available to hunters on adjacent private land. The combined value of animals sold for hunting in the two areas could exceed R350 000. This excludes any income from camp fees, tracking and other income. Certain trophy animals could also fetch a far higher price especially if sold to foreign hunters. In addition to these species, game that occurs at present on private land would also be available to hunters.

Table 5.2b: The expected price to be paid by local hunters for game hunted in the Kaboega and Darlington Dam sections of the proposed GAENP.

Species	Average price paid by local hunters (Rand)	Kaboega Section		Darlington Section	
		Expected no. of animals	Selling price (Rand)	Expected no. of animals	Selling price (Rand)
Plains zebra	2 300	3	6 900	5	11 500
Mountain zebra	2 300	7	16 100	2	4 600
Red hartebeest	2 600	6	15 600	8	20 800
Mountain reedbuck	700	9	6 300	9	6 300
Warthog	250	1	250	-	-
Grysbok	100	2	200	-	-
Elephant	20 000	1	20 000	-	-
Eland	5 000	15	75 000	5	25 000
Ostrich	1 000	18	18 000	15	15 000
Kudu	3 000	6	18 000	11	33 000
Bushbuck	1 000	7	7 000	-	-
Grey rhebuck	500	15	7 500	4	2 000
Klipspringer	200	12	2 400	4	800
Total		102	R 193 250	125	R 153 800

6. AREAS OF THE PLANNING DOMAIN NOT INCLUDED IN THE BASELINE SCENARIO

An additional area of 226 000 hectares falls outside of the baseline scenario but within the planning domain of the proposed GAENP. This is land not yet acquired by SANParks. It includes land that extends up to natural or existing boundaries such as major rivers or roads. The cost of purchasing this land, if indeed possible, would probably exceed R230 million. It is unlikely that all of this land can eventually be incorporated into the park. However, we suggest the best approach toward acquiring privately owned estates would be to allow landowners time to comfortably enter negotiations regarding incorporation of their land into the GAENP. For this to happen SANParks might first develop a framework for potential incorporation and then invite landowners in the area to participate in discussions regarding how this could be achieved.

7. CONCLUSION

The development of the GAENP offers potentially significant impacts, both positive and negative, on the region. These impacts will need to be controlled and guided, and SANParks must play an active role in this process. As land use changes, skills will need to be adapted to cope with this change. The park and surroundings will need to be

marketed and developed as a tourism destination in order to attract more visitors than at present. SANParks must ensure that their policies for the GAENP can accommodate private-sector participation in many aspects of the park including tourism, land incorporation and even conservation management. Communities need to be informed and assisted through changes so that they may participate in new opportunities arising from the GAENP. Regional infrastructure will need to be upgraded and improved and this includes providing access routes, points of entry at airports, and support services such as accommodation in surrounding areas and tourism agents.

Investment in the area would shift from agricultural projects towards conservation- and tourism- related initiatives. The existing agricultural industry will diminish as landowners opt for contributing to tourism products and services.

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