SADC Regional Programme for Rhino Conservation

Detailed Country Reviews Report

(Semester 2: Task 1.2 – 1)

Part I – Summary
Part II – Reviews

COOPERAZIONE ITALIANA
ITALIAN COOPERATION
AID 5064

CESVI
cooperazione e sviluppo

SADC
SOUTHERN AFRICAN DEVELOPMENT COMMUNITY
TOWARDS A COMMON FUTURE

IUCN
The World Conservation Union

WWF

SPECIES SURVIVAL COMMISSION
AFRICAN RHINO SPECIALIST GROUP

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ABOUT the SADC Regional Programme for Rhino Conservation:

The Programme is funded by the Italian Ministry of Foreign Affairs, Directorate General for Development Cooperation (Project AID 5064).

The Programme is contracted to CESVI and implemented through a regional consortium which comprises:

- The Secretariat of the Southern Africa Development Community (SADC)
- IUCN-ROSA (The World Conservation Union - Regional Office for Southern Africa)
- The IUCN African Rhino Specialist Group
- WWF-SARPO - (World Wide Fund for Nature - Southern Africa Regional Programme Office)
- CESVI (Cooperazione e Sviluppo)

The ***Programme goal*** is to contribute to maintain viable and well distributed metapopulations of Southern African rhino taxa as flagship species for biodiversity conservation within the SADC region.

The ***Programme objective*** is to implement a pragmatic regional rhino strategy within the SADC region following the acquisition of sound information on, firstly, the constraints and opportunities for rhino conservation within each range state and secondly, the constraints and opportunities for rhino metapopulation management at the regional level.

DISCLAIMER

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List of Acronyms

ADMADE	Administrative Management Design for Game Management Areas (Zambia)
AfRSG	African Rhino Specialist Group (IUCN/SSC)
AROA	African Rhino Owners Association
AWF	African Wildlife Foundation
BDF	Botswana Defence Force
BGP	Big Game Parks (Swaziland)
CBNRM	Community Based Natural Resource Management
CC	Carrying Capacity
CESVI	*Cooperazione e Sviluppo*
CITES	Convention on the International Trade in Endangered Species
CL	Communal Land
COMPASS	Community Partnerships for Sustainable Resource Management
CLZ	Conservation Lower Zambezi (Zambia)
DEAT	Department of Environmental Affairs and Tourism (RSA)
DFID	Department for International Development (UK)
DNAF	*Direcção Nacional da Africultura e Floresta* (Angola). National Directorate of Agriculture
DNFFB	*Direcção Nacional de Florestas e Fauna Bravia* (Mozambique). National Directorate for Forestry and Wildlife
DNPW	Department of National Parks and Wildlife (Malawi)
DNPWLM	Department of National Parks and Wildlife Management (Zimbabwe)
DNPWS	Department of National Parks and Wildlife Service (now ZAWA)
DWNP	Department of Wildlife and National Parks (Botswana)
EC	European Commission
ECC	Ecological Carrying Capacity
ECIS	Environmental Crime Investigation Services (SANP)
ECNC	Eastern Cape Nature Conservation (RSA)
ECZ	Environmental Council of Zambia
ESPU	Endangered Species Protection Unit (SAPS)
EU	European Union
EWT	Endangered Wildlife Trust
FNP	*Forum para a Natureza em Perigo* (EWT Mozambique)
FSEAT	Free State Department of Environmental Affairs and Tourism
FZS	Frankfurt Zoological Society
GDNC	Gauteng Directorate of Nature Conservation
GEF	Global Environmental Facility (World Bank)
GIS	Geographical Information System
GKG	Gaza-Kruger-Gonarezhou (TFCA)
GPS	Global Positioning System
GR	Game Reserve
GTZ	*Gesellschaft für Technische Zusammenarbeit* (German Technical Co-operation)
HUP	Hluhluwe – Umfolozi Park (KZNNCS)
IDF	*Instituto de Desenvolvimento Florestal* (Angola). Forestry Development Institute.
IMCS	Independent Management Consulting Services
IPZ	Intensive Protection Zone
IRDNC	Integrated Rural Development and Nature Conservation (Namibia)
IRF	International Rhino Foundation
IUCN	International Union for the Conservation of Nature
KfW	*Kreditanstalt für Wiederaufbau* (German Aid)
KNP	Kruger National Park (SANP)
KRS	Khama Rhino Sanctuary (Botswana)
KRST	Khama Rhino Sanctuary Trust (Botswana)
KWS	Kenya Wildlife Service
KZN	KwaZulu Natal
KZNNCS	KwaZulu Natal Nature Conservation Service
LIRDP	Luangwa Integrated Rural Development Programme (Zambia)
MCI	Ministry of Commerce and Industry (Botswana)
MCT	Malilangwe Conservation Trust (Zimbabwe)
MET	Ministry of Environment and Tourism (Namibia, and Zimbabwe)
MNF	Mokolodi Nature Foundation (Botswana)
MNR	Mokolodi Nature Reserve (Botswana)

MPB	Mpumalanga Parks Board
MPCC	Maximum Productivity Carrying Capacity
MZT	Marwell Zimbabwe Trust
NCAA	Ngorongoro Conservation Area Authority
NCNCS	Northern Cape Nature Conservation Service
NGO	Non-Governmental Organisation
NLNP	North Luangwa National Park (Zambia)
NORAD	Norwegian Aid
NP	National Park
NPB	Natal Parks Board (Now KZNNCS)
NPCDE	Northern Province Department of Land, Agriculture & Environment, Chief Directorate of the Environment (RSA)
NRMP	Natural Resources Management Project (Botswana)
NWPTB	North West Parks and Tourism Board (South Africa)
PC	Programme Co-ordinator (SADC RPRC)
PPF	Peace Parks Foundation
PRU	Protected Resource Unit (Namibian Police)
PS	Permanent Secretary
RAC	Rhino Advisory Committee (Namibia)
RESG	Rhino and Elephant Security Group
RMG	Rhino Management Group
ROSA	Regional Office for Southern Africa
RPRC	Regional Programme for Rhino Conservation
RSA	Republic of South Africa
RTCF	Rhino and Tiger Conservation Fund (USFWS)
SADC	Southern African Development Community
SADF	South African Defence Force
SANP	South African National Parks
SAPS	South African Police Service
SARPO	African Regional Programme Office
SAWC	South African Wildlife College
SCC	Social Carrying Capacity
SGDRN	*Sociedada para a Gestão e Desenvolvimento da Reserva do Niassa* (Mozambique). Niassa Development Society
SLNP	South Luangwa National Park (Zambia)
SNTC	Swaziland National Trust Commission
SR	Special Reserve
SR	Save the Rhino International (UK)
SRT	Save the Rhino Trust (Namibia)
SSC	Species Survival Commission (IUCN)
TANAPA	Tanzania National Parks
TAWIRA	Tanzanian Wildlife Research Institute
TFCA	Trans-Frontier Conservation Area
TRAFFIC	Trade Records on Fauna and Flora In Commerce
TWD	Tanzania Wildlife Division
USAID	United States Agency for International Development
USFWS	United States Fish and Wildlife Service
WCNC	Western Cape Nature Conservation
WECSZ	Wildlife, Environmental Conservation Society of Zambia
WPS	Wildlife Protection Service (Namibia MET)
WSM	Wildlife Society of Malawi.
WSTCU	Wildlife Sector Technical Co-ordination Unit
WU-DVS	Wildlife Unit of the Department of Veterinary Services (Zimbabwe)
WWF	World Wide Fund for Nature
ZAWA	Zambian Wildlife Authority
ZSL	Zoological Society of London

PART I
SUMMARY

PART I SUMMARY

Introduction

This document is a compilation of the detailed country reviews of rhino conservation in SADC rhino range states, carried out during the second semester of the SADC Regional Programme for Rhino Conservation (24th March to 23rd September, 2000). This was an important information-gathering exercise in preparation for the process of identification and selection of projects to be funded and implemented by the SADC consortium and the rhino range states over the remaining semesters of the programme.

The country reviews were written by representatives of SADC consortium members and external rhino consultants, and edited and compiled by Rob Brett (Programme Co-ordinator) and Raoul du Toit (WWF SARPO). With the exception of Angola, the reviews were written following information-gathering visits to the rhino range state (or province of the range state) in question. The reviews share the same format: a structured list of information required, drawn up in advance as terms of reference for the reviews (Task 1.2 – 1.1 of semester 2), and presented below.

This is followed by a summary table containing the main points in brief recorded from each range state during the review process, under each of the headings of the terms of reference for the reviews. This allows comparison of factors relevant to rhino conservation in each range state. These include:

- Unique or interesting features of legislation, wildlife policy or resources of particular range states, including factors that enable, or are catalysts for a successful approach or model for rhino conservation.
- Activities or structures that are clearly needed for individual range states to develop their rhino conservation programmes effectively, particular if input from the SADC region (through the SADC Rhino Programme) can assist.

Finally, a brief overview of the results of the process is presented in the form of salient issues or points of regional interest from the review of each country. This section highlights the regional rhino conservation linkages and co-operation already in progress, which may serve as models for similar linkages between SADC rhino range states in future.

Terms of Reference for Review of Rhino Range States

1 MECHANISMS FOR PLANNING AND COORDINATING NATIONAL RHINO CONSERVATION EFFORTS

1.1 Establish whether a national rhino strategy (outline of rhino management principles and policies) has been developed; if so, when, by whom, with what level of official authorization/endorsement, etc. Establish whether this is still current (i.e. being implemented) or in need of updating.

1.2 Establish whether this documentation incorporates or is separately reinforced by an action plan that specifies required rhino conservation activities with timings, responsibilities, allocation of resources, etc. Establish whether this action plan is still current or in need of updating, what the updating process will be, and whether there are impediments to this updating process.

1.3 Describe the composition and functioning of any formalized planning structures (committees, etc., at national or local level) that have been established to coordinate rhino conservation.

1.4 Specify any individual(s) who act as co-ordinator(s) for rhino conservation and/or act as focal point(s) for the SADC Rhino Programme, RMG, etc.

1.5 Establish whether there are any possibilities for the SADC Rhino Programme to facilitate the development or updating of the national rhino strategy and/or action plan (e.g. by mobilizing appropriate expertise).

1.6 Obtain copies of any national strategy, action plan or other relevant documentation.

2 EXISTING MECHANISMS FOR COLLABORATION WITH OTHER RANGE STATES
(Excluding SADC Rhino Programme).

2.1 Establish whether the range state is coordinating its rhino conservation activities in any concerted way with any other range state(s). Clarify whether any such coordination arrangements are formalized through high-level bilateral agreement or are more informal. Outline the background to, achievements to date from, and anticipated evolution of such arrangements.

2.2 Establish whether there were any previous commitments or interactions between the range state and any other(s), such as commitments to transfer rhinos or to undertake joint law-enforcement, that have been curtailed or have lapsed; comment on apparent reasons for any inertia or reduction in cooperation (note: if comments on this topic are diplomatically sensitive they should not be included in the report but should instead be given to the Programme Co-ordinator in confidence).

3 RHINO POPULATION STATUS

3.1 Provide current summary statistics on rhino numbers, distribution and population trends.

3.2 Outline the current approaches to and levels of detail of rhino monitoring, population status reporting, rhino poaching incidents, and penalization of people who are arrested for such incidents.

3.3 Specify any requirements for surveys and/or demographic monitoring to improve information on the status of rhino populations, where lack of such information is a definite constraint to the development and implementation of a national rhino conservation strategy and action plan.

4 MANPOWER AND OTHER RESOURCES FOR RHINO CONSERVATION

4.1 For each rhino area, or at least for major or representative rhino areas, obtain summary statistics on anti-poaching resources (scouts per km^2, recurrent annual expenditure excluding salaries per km^2, four-wheel-drive vehicles per km^2, salary levels for scouts and junior officers).

4.2 Ascertain the availability of expertise for specialized aspects of rhino management, notably for rhino tracking, capture, veterinary work, ecological evaluations and demographic monitoring.

4.3 Ascertain the availability of specialized equipment for rhino management, notably for rhino capture/translocation (recovery trucks, helicopters, crates, etc.).

5 PARTICIPATION OF NON-STATE AGENCIES IN RHINO CONSERVATION

5.1 Summarize any existing or proposed initiatives for direct community involvement in rhino conservation.

5.2 Outline the involvement of local and international NGOs in rhino conservation, specifying the general thrust of such involvement with indications of the levels of activity and financial contribution of each NGO.

5.3 Summarize the direct involvement of the private sector in rhino conservation. If there are any positive or negative aspects of this involvement that warrant comment, provide details.

6 PROPOSED PROJECTS

6.1 Outline concepts for projects that the range state feels meet the criteria for implementation within the SADC rhino programme, either within the country itself or as a regional project. Indicate lead agency, collaborative agencies (including potential funding agencies), budget levels, timetabling. If there are any additional potential projects that the reviewer has identified, these should also be outlined, but making it clear which concepts are suggested by the rhino management authority and which are suggested by other individuals or agencies.

7 NATIONAL LEGISLATION AND POLICIES OF RELEVANCE TO RHINO CONSERVATION

7.1 Provide an overview of legislation and policies relating to penalties for poaching rhinos, possession of rhino horns, hunting of rhinos, live sales of rhinos, etc. Draw particular attention to aspects of national law or policy that either preclude or reinforce models for rhino conservation such as community-based rhino projects or private ownership or custodianship options. Obtain copies of legislation, documented policies.

8 DATA SOURCES

8.1 List names, addresses, titles, and affiliations of all informants/interviewees.

8.2 Compile a list of the relevant reports and publications. Provide the Programme Co-ordinator with as much of this information as possible.

9 TRADE AND IMPORT/EXPORT OF LIVE RHINOS

9.1 Detail CITES management authority/authorities and veterinary requirements for import and export of live animals. List past translocations of rhinos into and out of the range state, sources and destinations, and transaction type (donation, sale, deposit, etc). This must include past translocations between SADC range states that have given rise to, or have augmented existing populations.

10 HORN STOCKS

10.1 Describe mechanisms within the range state and management authorities for control, storage and identification of horn stocks.

10.2 Indicate whether there has been official involvement of the range state in the AfRSG rhino horn fingerprinting project and what the attitudes are towards providing further samples for this project.

Summary Table of Results of Detailed Country Reviews

RANGE STATE	ANGOLA	BOTSWANA	MALAWI	MOZAMBIQUE	NAMIBIA	SOUTH AFRICA	SWAZILAND	TANZANIA	ZAMBIA	ZIMBABWE
PLANNING AND CO-ORDINATION										
Rhino Management Authority	*Instituto de Desenvolvimento Florestal* (IDF). Under Ministry of Agriculture	Department of Wildlife and National Parks (DWNP). Under Ministry of Commerce and Industry	Department of National Parks and Wildlife (DNPW). Under Ministry of Tourism	*Direcção Nacional de Florestas e Fauna Bravia* (DNFFB). Under Ministry of Agriculture	Ministry of Environment and Tourism (MET)	SANP; KZNNCS, NWPTB and six other provincial authorities. Department of Environmental Affairs and Tourism (DEAT)	Big Game Parks. Under Office of the King of Swaziland. BGP replaced Swaziland National Trust Commission in 1998.	Wildlife Division (only authority for *D.b.minor*). Also TANAPA, NCAA. Under Ministry of Natural Resources and Tourism	Zambia Wildlife Authority (ZAWA). Under Ministry of Tourism	Department of National Parks and Wildlife Management (DNPWLM). Under Ministry of Environment and Tourism
Rhino Conservation Strategy (Year)	None.	Black and White rhino (1991-99): Old draft, in need of updating and endorsement	None.	None.	Black and White rhino (1997): current. Updated twice since 1989. Confidential.	Black rhino (1997): endorsed. SANP has its own conservation plan for black rhino. White rhino (2000): endorsed.	None.	Black rhino (1998): a revision of the first national plan of 1993, but still not yet formally endorsed	None at present. 1992 strategy for black and white rhinos was not formally endorsed, and is now out of date.	Black Rhino Policy and Management Plan (1997): endorsed.
Action Planning	None.	None, except for actions (no timing specified) in old strategy	Formal planning for Liwonde sanctuary only	None.	5-yearly and annual action plans, endorsed by RAC	Action planning by individual authorities	No formal action planning.	None, although there are indicators/timings in the 1998 plan	None.	Stalled. No implementation of past annual plans.
Co-ordinating Committees	None.	Committee (RMG) specified in 1991 strategy, but has not yet met.	None.	None.	Rhino Advisory Committee (RAC). Also member of RMG	RMG, RESG. KZNW has a Rhino Security and Management Committee.	RMG, RESG	Rhino Conservation Steering, Rhino Management Committees (1 meeting to date).	None. Research and Law Enforcement divisions will be responsible in future	Yes, and met in November 200 for the first time since 1996. Member of RMG
Focal Point for SADC programme	Nkosi Luta Kingengo, IDF	Moremi Tjibae, DWNP	Dr Roy Bhima, DNPW	Felismina Longamane Langa, DNFFB	Rudi Loutit, MET	Dr Mike Knight, SANP	Ted Reilly, BGP	Matthew Maige, TWD	George Kampamba, ZAWA	Florence Msipa, DNPWLM
COLLABORATION WITH OTHER SADC RANGE STATES										
Existing collaboration with other SADC range states	Quiçama NP and Kissama Foundation, with South Africa (NWPTB). Kissama foundation has confirmed that they are interested in acquiring white rhinos.	South Africa (NWPTB): formal ties, provision of white rhinos. Past introductions of white rhinos were from the NPB (1960-80: 94), who also assisted with recovery of the 8 remnants (1994-96).	Agreement with SANP (RSA) for Liwonde NP, including construction of fence and tourist camp, and provision and transport of rhinos. Not a formal high-level agreement, mainly Director-level comms.	Present TFCA areas, e.g. the Gaza-Kruger-Gonarezhou area includes black and white rhinos. Cross-border co-operation with Kruger NP, with which parts of Coutada 16 could form larger PA for rhinos.	None. Historically extensive with SANP, including sales of white and black rhinos, and exchanges for other species.	Malawi (DNPW): formal. Botswana (DWNP): NWPTB Mozambique: cross-border security comms with Kruger NP. Tanzania (WD) *D.b.michaeli* from SANP. Zimbabwe (Malilangwe): sale of *D.b.minor*.	No formal links with other range states, although working closely with SAP ESPU. Past introduction from KZNW/NTP of black and white rhinos. Initial black rhino founders came from Zimbabwe.	Informal, with South Africa: translocation of *D.b.michaeli* from (6 rhinos) and to (1 rhino) SANP (Addo NP), with veterinary and technical support from SANP.	None, except for informal contacts with Zimbabwean authorities. Past co-operation with NPB in early 1960s (translocation of white rhinos)	None, except for ongoing security contacts with Zambian counterparts.
Commitments to other SADC range states	No information available.	2 black rhinos from Namibia (1990).	2 black rhinos from SANP. 50 Niassa wildebeest from Tanzania.	None, beyond existing TFCA programme(s)	Presidential commitment of 2 black rhinos to Botswana (1990).	2 black rhinos to Liwonde from South Africa (SANP).	None. Delay in Lusaka task force has hindered cross-border law enforcement.	50 Niassa wildebeest for Malawi (agreed by presidents), postponed 2001	None.	None

Summary Table of Results of Detailed Country Reviews

RANGE STATE	ANGOLA	BOTSWANA	MALAWI	MOZAMBIQUE	NAMIBIA	SOUTH AFRICA	SWAZILAND	TANZANIA	ZAMBIA	ZIMBABWE
RHINO POPULATION STATUS AND MONITORING										
Rhino numbers (AfRSG 2000)	*D.b.minor*: extinct (last reports 1989-1990). *C.s.simum*: extinct (twice)	*D.b.minor*: extinct *C.s.simum:* 30	*D.b.minor:* 7 (Liwonde NP sanctuary)	*D.b.minor*: 0? (isolated reports) *C.s.simum*: extinct (twice)	*D.b.bicornis:* 697 Confidential pops *C.s.simum:* 163 Confidential pops	*D.b.minor*: 1074 *D.b.bicornis*: 42 *C.s.simum*: 9,754	*D.b.minor:* 10 Confidential pops *C.s.simum*: 50 Confidential pops	*D.b.minor:* 15 (min. estimate Selous GR)	*D.b.minor*: 0? (isolated report of 1 rhino in 2000) *C.s.simum:* 5 (not indigenous?)	*D.b.minor*: 434 *C.s.simum*: 208
Monitoring and reporting	No official information on rhinos on Angola since independence, although survey indicated 30 black rhinos in Iona NP in 1971	Adequate in fenced areas, using individual ID. Sporadic reports of outliers (white rhinos) in Moremi GR and Nata area (presumed to be temporary migrants from Zimbabwe)	Liwonde sanctuary: Individual ID, daily patrols by 2 armed scouts and fence staff. Patrol reports compiled. Initial problems with surrounding communities and fence destruction.	Little or no rhino monitoring activities. Isolated reports of rhinos from villagers, hunters and/or scouts. However, some recent arrests of poachers made and horns recovered (Coutada 16)	Adequate for conservative metapopulation management. Individual ID, Waterhole surveys, ear-notching, radio-telemetry. Databases (National and Kunene) and status reporting, also to RMG	Adequate. Aerial surveys, individual ID, ear-notching. Routine status reporting to RMG.	Adequate. Individual ID, black rhinos sighted every 2-3 days. No written status reports produced by BGP.	Ground surveys and patrols with some individual ID. Selous GR Kidai area: patrols and occasional sightings. Lukuliro: surveys including dung DNA (1997-98), with only one sighting made.	Individual ID, white rhinos at Mosi-oa-Tunya confined in the 11 km^2 fenced area, and monitored daily.	Adequate for conservative metapopulation management, though inadequate monitoring of IPZs in recent years. Individual ID, ear-notching, semi-intensive monitoring, radio-collaring, spoor recording
Requirements for surveys and monitoring	No recent reports of any rhinos in Angola to provide the basis for any survey.	Inadequate monitoring capacity within DWNP areas, including outliers. Ear-notching now required in Khama RS.	No requirements for surveys. Possible need for improved rhino monitoring and specific training.	Surveys and monitoring required in all areas with plausible reports of rhinos. Initial confirmed evidence of rhinos required.	Better information needed on black rhino populations in Etosha NP and Kunene. Limiting factor of suitable areas for new populations.		No population surveys required. Assistance requested for review of rhino CC estimates and browser stocking levels	Urgent need for improved surveys and monitoring, including specialised tracking, patrol effort, spoor ID, dung DNA ID.	Ground surveys for black rhinos in 2-3 remote areas. Need to investigate lack of breeding in Mosi-oa-Tunya white rhinos.	Routine and systematic approach to monitoring and status reporting. Ear-notching.
MANPOWER AND RESOURCES FOR RHINO CONSERVATION										
Scout density	No information available.	Fenced areas: 1 per 2-7 km^2. Chobe/Moremi: 1 per 250 km^2	Liwonde NP: 1 per 20 km^2	PA's: 1 per 22-400 km^2. Coutada 16: 1 per 1000 km^2	Confidential.	NWPTB mean: 1 per 19.6 km^2 KZNW mean: 1 per 8.8 km^2	BGP: 1 per 5-14 km^2	Selous GR (50,240 km^2): 1 per 170 km^2	ZAWA (Mosi-oa-Tunya): 1 per 2.75 km^2 for the 11 km^2 fenced area, 1 per 8.25 km^2 for the NP	DNPWLM (indicative): 1 per 100 km^2. Lowveld conservancies: 1 per 25 km^2
Vehicle density	No information available.	Information not available.	No vehicles attached to sanctuary.	No information available.	Confidential.	NWPTB mean: 1 per 240 km^2 KZNW mean: 1 per 73 km^2	BGP: 1 per 5-30 km^2 (including tourist patrol vehicles)	3-7 for each of 7 sectors in Selous GR	Mosi-oa-Tunya: 1 4WD vehicle for the 11 km^2 fenced area.	DNPWLM (indicative): 1 per 500 km^2
Operating budget (US$)	No information available.	Private fenced areas: $1,163-4,400 per km^2. DWNP areas: unknown	Liwonde sanctuary (38 km^2): $16 per km^2	No information available.	Etosha NP: $11 per km^2	NWPTB mean: $238 per km^2 KZNW mean: $232 per km^2	Information not available.	Selous GR (50,240 km^2): $30 per km^2	Information not available from ZAWA.	Lowveld conservancies (incremental cost of rhinos): $31-57 per km^2
Salaries ($ p.a.)	IDF	DWNP	DNPW	DNFFB	MET	NWPTB	BGP	WD	ZAWA (pending)	DNPWLM
Warden	N/a	N/a	$578 – $698	N/a	N/a	$15,963	Confidential	$1,355	$8, 182	$5,412
Ranger	N/a	$3,739 – $4,498	$340 – $574	N/a	$2,903 – $3,903	$6,665	Confidential	$979	$2,727	$3,528 – $3,996
Scout	N/a	$3,120 – $3,710	$225 – $299	$540 – $600	$1,720 – $2,473	$5,655	Confidential	$828	$1,636	$1,056 – $1,176

Summary Table of Results of Detailed Country Reviews

RANGE STATE	ANGOLA	BOTSWANA	MALAWI	MOZAMBIQUE	NAMIBIA	SOUTH AFRICA	SWAZILAND	TANZANIA	ZAMBIA	ZIMBABWE
Expertise	Presumed to be limited, although translocation of elephants to Quiçama NP must implies capacity for protection and monitoring	Very limited or inadequate (rhino monitoring, veterinary). Private vet/capture, and ecological evaluation expertise available.	Limited. Liwonde Rhino protection unit trained in rhino tracking at Kruger NP in RSA. No capture expertise. Ecological evaluations and monitoring by Wildlife Res Unit.	Inadequate. Several qualified vets, but limited or no experience with rhinos. Some DNFFB staff have trained in wildlife management at SAWC and Mweka.	Adequate and extensive in all areas, vet/capture, monitoring, ecological evaluations), available within MET, although monitoring may need outsiders.	Adequate and extensive. NWPTB: rhino monitoring, ecological evaluations in house. Vets and rhino capture contracted.	BGP uses rhino vets and capture units from RSA. All eight appointed game rangers are able to handle drugs. Assistance with ecological evaluations requested.	Limited (monitoring) through Rhino Co-ordinator. TANAPA vet has some rhino experience, but external vet input required. Also for ecological evaluations.	Limited or non-existent. There are posts for two vets in the new ZAWA structure, and 1 appointed. Research division has ecologists for monitoring	Adequate (tracking, veterinary, capture, ecological monitoring)
Equipment	No information available.	Adequate aircraft in DWNP, but inadequate or unserviceable capture vehicles or equipment. Good bomas at Khama RS	None in DNPW. All capture and translocation equipment supplied by SANP and donors.	None.	Adequate, including, fully equipped MET capture unit, with fixed-wing and helicopter support. Bomas in all areas.	Adequate. NWPTB: has bomas, but aircraft & capture equipment contracted	Limited capture vehicles and equipment available. Other resources unknown.	One 4WD Merc truck available for rhino moves. NCAA has two crates. Previous donated rhino truck plus crane: location unclear.	None in ZAWA.	Adequate. Limited DNPWLM vehicles, equipment and aircraft, but available from NGOs and private contract.
PARTICIPATION IN RHINO CONSERVATION										
Community	None.	Khama RS was set up as community project, with village headmen as trustees, but limited revenue to share. Mokolodi NR works as educational establishment. Otherwise limited or non-existent.	No direct community involvements. Collaborative approach at Liwonde through advisory committee, with community reps. Ultimate intention to release rhinos into park, with cooperation of community a necessity.	Several initiatives (Tchuma Tchatu, Catuane, SGDRN (Niassa Development Society), but none with rhino component. GKG TFCA requires substantial community involvement, and will depend on successful participation.	Long-standing and successful community participation in conservation of Kunene population (communal land), dependent on NGO funding & employment (SRT/IRDNC). Several conservancies in development across range.	NWP: none direct, but active liaison, economic, employment and entrepreneurial opportunities. KZNW: visitors charged community levy paid to traditional authorities. Local boards set up for many rhino reserves. SANP: unknown.	No direct community programmes around parks. Support offered by BGP for a co-operative community conservation programme around Hlane NP, conditional on community commitment of providing cattle.	No formal schemes linked to rhinos, though some informer rewards given. More general community schemes in Selous GR, but one major hostile community of traditional poachers. NCAA has community involvement in management.	No formal community involvement in rhino conservation. The present ADMADE programme operates outside Protected Areas, and any rhino introduction would likely to be into National Parks.	No rhinos left alive on communal land. Plans for community wildlife stake-holding in the white rhino population at the Save Valley Conservancy.
NGOs	Kissama Foundation, devoted to Quiçama NP, could fund introduction of white rhinos to Angola (for the second time)	Khama Rhino Sanctuary Trust, and Mokolodi Nature Foundation, mainly supported by local donors.	The J & B Circle of Friends has supported the Liwonde project from the start, including construction and recurrent costs. Funds mostly raised locally ($25,000 pa). Also FZS, WWF-US, WSM.	WWF was involved in 1998 rhino surveys in Tete province, currently advising on planning in Niassa GR. USF&W, Tusk Trust, etc have supported SGDRN, including funding law enforcement.	SRT, IRDNC (Kunene), WWF (Etosha, monitoring), AWF, SRI (Waterberg). Most areas still entirely funded by MET.	Minor donor funding for monitoring and translocation in NWP. WWF provides major support for projects in Kruger NP and KZNW reserves. USF&W RTCF supported numerous projects in RSA	BGP has been supported by numerous local and international donors, including WWF, EU, GoUK Rhino Rescue Trust and many local companies (e.g. Suzi candles that). Donor support is encouraged by BGP.	Sand Rivers Project, with EU funds ($550,000 over 2 years) through GTZ, also supports Selous GR. WWF support for E sector Selous ($200,000 p.a.), incl. salaries. SRI supports Sand Rivers project (ranger post).	Save the Rhino Trust (local) is the only NGO directly involved with rhino conservation, although FZS is seeking to support rhinos in N Luangwa NP. International NGOs: NORAD, FZS, WECSZ, CLZ, ECZ	WWF SARPO & Beit Trust (Conservancies, Vet Services). Malilangwe Trust. SRI, IRF (Vet, Capture & Management), Marwell Trust (captive breeding, re-intro research), Zambezi Society (Matusadona IPZ).

Summary Table of Results of Detailed Country Reviews

RANGE STATE	ANGOLA	BOTSWANA	MALAWI	MOZAMBIQUE	NAMIBIA	SOUTH AFRICA	SWAZILAND	TANZANIA	ZAMBIA	ZIMBABWE
Private Sector	None.	Botswana's present rhino conservation effort almost entirely on private land, (Khama RS and Mokolodi NR) with only one animal controlled by DWNP (Gaborone GR). Although generally positive, one possible negative aspect is the reduced incentive for the DWNP to manage rhinos.	Private sector involvement very important, including J & B Circle funding. Private sector can also be involved through system of honorary rangers within DNPW.	Grupo Madal is one of the constituents of SGDRN, and is obliged to contribute minimum annual funding to Niassa GR, which may still contain some black rhinos. Development of Mapulangwene may involve substantial private sector involvement in tourism, with future plans for stocking black and white rhinos.	Innovative and successful custodianship scheme for black rhinos on private land areas, which are evaluated for habitat, security & management. Approved properties sign MoU with MET, backed by comprehensive info & guidance. Founder groups of 3m:3f. Rhino numbers have doubled since 1993.	Very extensive private ownership of white rhinos, with total numbers now difficult to determine. Black rhinos also privately owned, sold groups of 6 by KZNW hitherto. Excepting Kruger NP, additional land area for rhino conservation dependent on incentives to private owners. Minor support from lodges and volunteers for rhinos in NWPTB.	BGP is privately run, and the main park is privately owned and managed. Most of BGP's operating expenses are covered by profits from cattle herd operations and tourism. Some land included in Hlane NP has been acquired though land swaps, with additional revenue derived from a sugar company now able to traverse swapped land.	No involvement. All *D.b.minor* in Selous GR. No private game ranches.	Involvement only in the form of honorary rangers. No other information available.	70% of black rhinos held on private land in successful custodianship scheme: a catalyst for change of land use from cattle to wildlife. Threats from political and ownership issues.
LEGISLATION FOR RHINO CONSERVATION										
Protected status of rhinos	Rhino are listed as protected species under the *Regulamento de Caça* (1955).	Rhinos (any colour) are listed as protected game animals (Wildlife Conservation and National Parks Act 1992, 6th schedule)	Legislation is National Parks and Wildlife (No 11 of 1992). Rhinos are listed annually as protected species, e.g. the NP&W Protected Species Order of 1994	Rhinos are listed as protected species under still-used 1955 legislation: Caça Legislação, with list updated in Modalidades de Caça 1978. New legislation in preparation.	Rhinos (both colours) are designated 'specially protected game' under Nature Conservation Ordinance No 4 of 1975.	Provincial legislation, to be superseded by national Endangered Species Act. NWP: offences for black and white rhinos carry different penalties	Black and White rhinos are 'specially protected game', under the Game (Amendment) Act of 1991 (1st schedule) and Game (Amendment) Order 12 of 1993.	Black rhinos are protected as National Game under the Wildlife Conservation Act 1974, National Game Order (274) of 1974, and Economic & Organised Crime Act (13) of 1984	Rhinos are specified as protected animals under the Zambia Wildlife Act (No 12) of 1998. There is also a Policy for NPs and Wildlife in Zambia (1998)	Black and White rhinos are 'specially protected species' under the Parks and Wildlife Act of 1975 (Chapter 20:14) amended 1990. Statutory instrument 362 of 1990
Penalties: poaching of rhinos, and illegal possession of rhino horn	No information available.	Fine of $20,000 and 15 years imprisonment. These penalties are also prescribed for failing to hand in horns, or failing to report circumstances of a rhino killing.	Illegal killing of rhinos, or trade in or illegal export or import of rhino horn: 5 years imprisonment and fine of MK10,000 ($125). These penalties under new policy likely to be increased to 10 years imprisonment and fine of MK 50,000 ($625)	Disturbing wildlife is an infraction: $120-6,000 fine, but increased by factor of 10 if it involves species threatened with extinction (max fine of $60,000). Crime & imprisonment only specified if failure to pay. No provision for rhino trafficking offences.	Fine of R1,150-2,500 ($148-320) or 2-6 years imprisonment specified for hunting without permit (1975). Fine of R200,000 ($25,650) and/or 20 years for possession, utilisation, export, import, trade or transportation in rhino horn (1990 amendment).	NWP: White rhino: $6,400 fine or 5 years imprisonment. Black rhino: $12,800 fine or 10 years. Subsequent convictions: no option of fine. NP Act: white and black rhino offences are not separated. $3,800-$12,800 fine or minimum of 3 yrs.	5-15 years imprisonment, without option of fine, specified for hunting rhinos without a permit. 7-17 years imprisonment, without option of fine, for trafficking. Offender also required to pay replacement value of rhino, failing which 2-6 further yrs imprisonment.	Poaching: 10-30 years imprisonment, or fine of 10 times the sport-hunting value of the rhino. The Wildlife Conservation (Dealings in Trophies) Regs 1974 specify penalties for illegal trading in CITES animals, including rhinos.	Poaching: 5-20 years imprisonment, no option of fine (1st offence). 7-25 years, no option of fine (2nd offence). Horn trafficking: 7-20 years imprisonment, no option of fine (1st offence). 10-25 years, no option of fine (2nd offence)	Mandatory sentences of 5-15 years imprisonment (1st conviction) and 7-15 years (2nd conviction); and/or maximum fine of Z$15,000 (with devaluation of Z$, fine currently US$283, compared with US$5,700 in 1990)

Summary Table of Results of Detailed Country Reviews

RANGE STATE	ANGOLA	BOTSWANA	MALAWI	MOZAMBIQUE	NAMIBIA	SOUTH AFRICA	SWAZILAND	TANZANIA	ZAMBIA	ZIMBABWE
Safari Hunting of rhinos	Safari hunting suspended since 1976.	All hunting or capture prohibited, except if permit is issued by the Director of Wildlife 'in the interests of conservation'	Hunting of protected species, including rhinos, prohibited.	Hunting of rhinos is prohibited by the 1955 hunting law.	Safari hunting of white rhinos is regulated under 1975 legislation. White rhinos can be hunted and trophies exported to several countries, and non-lethal hunting is also permissible under certain conditions.	NWP: Safari hunting of white rhinos permitted.	Safari hunting of rhinos allowed by special permit. Trophies can be exported and imported with permit.	National Game animals (including black rhinos) are protected and hunting is prohibited, except under President's licence. Special rules apply to the registration and marking of rhino horn.	Safari hunting of rhinos prohibited, except under special licence.	Safari hunting of white rhinos allowed, on issue of permit. Any horns recovered are state trophies, but precedent for issue of permits for possession of horns from owned rhinos.
Live Sales of rhinos	No information available.	No possession or keeping of rhinos permitted without a permit from the Director of Wildlife. White rhinos have been purchased by from South Africa by Mokolodi NR and Tholo Ranch.	Trade in protected species prohibited, except where animal is lawfully acquired under licence by a person in possession of valid certificate of ownership.	Live sales of rhinos presumed to be permitted under conditions of ownership, where rhinos would have to be re-introduced to a game farm or concession area.	Live sales of white rhinos are permitted. Black rhinos belonging to the state can be sold to private individuals and exported from Namibia. White rhino prices (du Preez Auctions August 2000): $21,200 each.	Live sales of black and white rhinos are permitted internally. White rhinos can be sold abroad to approved destinations. White rhino prices (KZNW 2000): $29,200 each (mean). Black rhino (KZNW 2000): $54,750 each.	Information not provided. No clause relating to live sales of rhinos in 1990 and 1993 legislation.	Sale of 'government trophy' is illegal, this including CITES animals, and consequently black rhinos.	Certificate of ownership for protected animals may be issued by the Director of Wildlife. Written permission of Director is required for all live sales. Trade and movement are regulated by the Minister of Tourism.	Live sales of white rhinos are allowed, on issue of permit. Imports of white rhinos to Zimbabwe have all been through private purchase. In 1992, Black rhinos were bartered for a helicopter and running costs with USA and Australian zoos.
Custodianship	No information available.	White rhinos recovered from Moremi/Chobe in 1994-96 are held in Khama RS under a clear custodianship arrangement (by MoU between KRS and GoB). Rights of ownership of offspring of GoB rhinos and those purchased and imported from outside (e.g. KRS) are not entirely clear.	No provision for custodianship of rhinos, or any wildlife species under legislation.	No provision for custodianship of rhinos under legislation. No provision for rhinos or large mammals as flagship species under Biodiversity Strategy and Action Plan (1987).	Framework document for private sector involvement details Namibia's custodianship scheme, with MoU signed between land owner and MET.	No information available.	Effectively, BGP are managing Swaziland's rhino on behalf of the King and Government, by Royal Warrant. The King may gazette areas for protection of game, including rhinos.	No provision for custodianship on the existing legislation.	No provision for custodianship of rhinos under legislation, although the Wildlife Policy 1998 (section 2.7.1) provide for establishment of licensed game ranches, and a contract agreement with ZAWA for such establishment(s).	Black rhinos allocated to private landowners under custodianship scheme, although inconsistency exists between landowners over issue of permits.

Summary Table of Results of Detailed Country Reviews

RANGE STATE	ANGOLA	BOTSWANA	MALAWI	MOZAMBIQUE	NAMIBIA	SOUTH AFRICA	SWAZILAND	TANZANIA	ZAMBIA	ZIMBABWE
Ownership	No information available.	Ownership related to the ability of a land owner to confine the animal (as Zimbabwe). Rights of ownership of rhinos purchased from within or outside Botswana not clear in legislation. No provision for community ownership.	Ownership of all wild animals, existing in their wild habitat, is vested in the President. Act makes no specific reference to wildlife on private land or private ownership.	Game can be privately owned, if re-introduced to game farm or concession area (1999 framework law). Otherwise all game is owned by the Government of Mozambique.	Ownership of white rhinos within Namibia provided for in legislation, although black rhinos can only be sold for export.	Black and white rhinos can be privately owned.	Information not provided. No clause relating to ownership of rhinos in 1990 and 1993 legislation.	Possession of 'government trophy' is illegal, this including CITES animals, and consequently rhinos.	Ownership of wildlife is vested with the President. However, ownership is provided for those licensed for legal capture. A landowner has rights of use of animals in his land. Provision for ownership of rhinos needs to be clarified in policy document	Rhinos can be owned by private individuals who are appropriately licensed, but demonstrated control of the animal on his/her land required. No expectation ownership of black rhinos under custodianship.
TRADE AND IMPORT/EXPORT IN RHINOS										
CITES authority	*Instituto de Desenvolvimento Florestal* (IDF)	Department of Wildlife and National Parks	Director of National Parks and Wildlife	*Direcção Nacional de Florestas e Fauna Bravia*	Ministry of Environment and Tourism	National CITES authority in Gauteng	The Kingdom of Swaziland's Big Game Parks	The Tanzania Wildlife Division	Zambia Wildlife Authority	Department of National Parks and Wildlife Management
Licences required	No information available.	CITES import and export permits. Veterinary permits also required for import, also permit to capture in Botswana. Receiving properties are approved by DWNP	Import and Export licences from CITES authority. Vet requirements: certification from exporting country (e.g. RSA), not from an area with FMD or Anthrax, quarantine for 21 days, inspection	Import and Export licences from CITES authority, all through National Director. Licences also required from the National Directorate of Animal Production (Vet Services)	Import and Export licences from CITES authority, MET. Permit required from Veterinary services.	Import and Export licences from CITES authority. Veterinary licensing requirements not known.	Import and Export licences from CITES authority. No other information available.	Import and Export licences from CITES authority. Certificate of good heath from a Veterinary Officer required for export. Veterinary requirements for import are not clear.	Import and Export licences from CITES authority. Veterinary requirements not certain, but quarantine and inspection certainly required.	In addition to CITES permits, an import/export veterinary protocol from wildlife unit, DVS is followed, including removal of parasites. Internal transfers of rhinos require vet movement permit.
Past translocations: Exports	None.	None.	None.	None.	Black rhino (*D.b.bicornis*, 1980-95): 9 (Tswalu, Lisbon zoo) & >3 (SANP)	Black rhino (1994-1999): 51 White rhino (1994-1999): 206. All *C.s.simum* worldwide descended from translocated NPB founder stock.	None.	Only recent export has been one *D.b.michaeli* to SANP (1997-98)	None.	Black rhino (1964-1992): 54 White rhino (1962-1998): 5?
Past translocations: Imports	White rhino (1968): 10 from Natal Parks Board to Quiçama NP (all died).	White rhino (1967-1980): 95 (1989-1999): 19	Black rhino (1993): 2 (1998): 2, from Kruger NP to Liwonde NP.	White rhino (1969): 83. 71 to Maputo GR, 12 to Gorongoza (all died).	White rhino, include (1995): 10 to Etosha NP from Kruger NP	Black rhino (1994-1999): 18 White rhino (1994-1999): 2	Black rhino (1987-1999): 12 (6 from Zimbabwe, 6 from KZNW/RSA)	Only imports have been of *D.b.michaeli* from SANP (6 in 1997-98)	White rhino (1960s): 5 to Mosi-oa-Tunya (all died) White rhino (1994): 6	Black rhino (1962-1998): 28 White rhino (1962-1998): 169

Summary Table of Results of Detailed Country Reviews

RANGE STATE	ANGOLA	BOTSWANA	MALAWI	MOZAMBIQUE	NAMIBIA	SOUTH AFRICA	SWAZILAND	TANZANIA	ZAMBIA	ZIMBABWE
RHINO HORN STOCKS										
Stock	Unknown.	121 horns (ca. 210 kg): October 2000.	No stock of rhino horn.	1 pair, seized in 2000 (originating from Coutada 16, or Kruger NP)	Unknown quantity, complete register provided to TRAFFIC (2000)	Unknown quantity.	Unknown quantity.	Unknown quantity.	24 full horns (total 17 kg) and 6 pieces (2.5 kg).	Unknown quantity.
Control	No information available.	Horns stored and secured in DWNP strong room/ivory store. Register of all horns maintained, also in spreadsheet table. Horns marked with permanent black marker only.	Horn (would be) stored in main ivory storeroom in Lilongwe, with recording using CITES format. Horns tagged and numbered for identification.	Horn is stored in the Maputo strongroom (believed to be on Floor 16 of Depart of Agriculture). Horn also stored at provincial level. ID codes for horns provided by central government. No information on marking.	Horns controlled and stored in two places (MET strongroom and bank strongroom in Windhoek). All horns marked with permanent marker, but no transponders. MET Policy on control of rhino (1999) horn followed.	Horns are auditable item for NWPTB and KZNW. NWP: Secured in secret vault, and implanted with microchip transponders. Urgent need to improve controls and recording of horn stockpiles on private land.	Recovered horns all secured and controlled by BGP. No other information available.	Horns recovered by the Wildlife Division are stored in Dar-es-Salaam. Horns are marked with a number, showing district of origin and year of recovery.	Horns held in strongroom at old National Parks HQ at Chilanga. Horns have serial number punched into them, all recorded on register. Records in register do not include source information.	Effective control of horn stock, with guidance of TRAFFIC, using database and field registers. All horns stored in DNPWLM strongroom. Marked with indelible pen.
Horn Fingerprinting project involvement	No involvement in the FP project.	No samples provided to project to date. Considerable benefit to SADC region would follow from this provision.	No involvement, as no horn stocks. Samples taken from horns of Liwonde sanctuary offspring could be interest.	No involvement to date, no horn in stock until recently.	Extensive involvement in FP project, with samples supplied from all representative areas, showing valuable results	Many RSA conservation agencies and private reserves have participated. Strong support for methods.	Samples were provided to the FP project, and BGP have been very supportive. More black rhino samples required.	While support had been obtained from past Directors of Wildlife, no samples have been obtained.	No involvement to date.	No cooperation with first phase of FP project, but agreement that horn samples can be provided (October 2000)

Salient Points and Issues

SOUTH AFRICA

A North West Parks & Tourism Board

The linkage between NWPTB and its counterpart agency in Botswana is an example of the kind of intraregional cooperation that the SADC Rhino Conservation Programme should encourage. This cooperation has led to the donation of eight white rhinos to Botswana, in two batches, but it is important to note that this was not merely a grand political gesture that ignored conservation realities; the donation of the second batch was dependent upon the demonstration of sound conservation measures for the first batch.

Another model for rhino conservation is shown in the way that NWPTB interacts with and depends upon a wide range of stakeholders and external agencies to get rhino conservation needs attended to. There is a tendency for African conservation departments to feel that it is somehow improper to get vital rhino conservation functions undertaken by non-governmental agencies or individuals, but because the departments do not have the resources or the expertise to do all these tasks themselves, they often do not get done at all. NWPTB obviously remains in the driving seat for rhino conservation but has developed a support network involving volunteers, honorary officers, private lodges, private capture units, private veterinarians, etc. The development of a trust fund to sustainably meet the monitoring costs in Pilanesberg is one of the progressive outcomes of this support network. Contracting private operators for certain jobs (including fence maintenance and rhino captures) shows a businesslike approach that is likely to entail far lower costs than if NWPTB tried to do everything in-house.

The concept of an “audit” of wildlife, as is undertaken annually for the wildlife assets that NWPTB is responsible for, is another progressive, businesslike approach that could be followed elsewhere in the region. This approach helps to ensure accountability on the part of the rhino management agency. Such accountability might well include critical assessments of the extent to which the rhino management agency is productively managing rhinos for maximum return (population growth equating to “profitability”), just as the performance of an investments manager is related to the increase in value of the investments portfolio that he manages.

B SANP, KZNNCS AND OTHER SOUTH AFRICAN AREAS

The South African rhino management agencies (provincial and national) have shown how a range of such agencies can find a pragmatic balance between their joint efforts and their individual efforts. On the one hand, some joint effort is required to share expertise and information, and to ensure that national conservation goals are defined, but on the other hand each agency has to have a reasonable degree of freedom for decentralized decision-making and field action. Through the SADC Rhino Conservation Programme, it should be possible to reach a similar balance at the regional level.

There appears to be a need to rationalize some of the terminology. In the South African context, the term “conservation plan” appears to apply to an outline of rhino management goals, principles and policies. It could be argued that this type of framework should be termed a “strategy”, while a plan (or “action plan”) operates at a subsidiary level to specify required rhino conservation activities with timings, responsibilities, allocation of resources, etc. This may seem like semantics, but it may well be worth clarifying terminology within the SADC Rhino Conservation Programme.

The Rhino and Elephant Security Group (RESG) has apparently lapsed into an inactive state and the South African range state review has highlighted calls for funding from the SADC Rhino Programme to help resuscitate the RESG. The SADC Rhino Programme was designed to avoid overlap with RESG and the issue of funding support should only be considered following a thorough review of the role and achievements of RESG to date, along with the clear specification of its potential ongoing role and a justification as to how this fits the funding parameters of the SADC Rhino Conservation Programme.
South Africa provides major lessons for the region regarding the positive role of the private sector in rhino conservation, and regarding the development of market values for rhinos leading to the generation of significant conservation funding and incentives for wildlife production as an economically viable land-use.

ZIMBABWE

A negative lesson from the Zimbabwean experience, of relevance to regional rhino conservation efforts, is that a rhino strategy is unworkable without political commitment. Although a national strategy was developed in 1997 with international expertise and local stakeholder contributions, this strategy was "left on the shelf" for several years and it is only recently, following administrative changes within the Department of National Parks and Wildlife Management, that rhino action planning is being taken seriously.

The concept of rhino "custodianship" was first established in Zimbabwe in 1986 and has since become a significant element of the Namibian rhino conservation strategy. This concept may well have applicability elsewhere in the region. A significant outcome of the Zimbabwean experience is that when allocating rhinos under the custodianship scheme, these animals (and some of the donor support that was available for this scheme) were used as leverage to get landowners to amalgamate their properties into conservancies. This has created extensive rhino conservation areas within which rapid population growth has been possible without overstocking problems or inbreeding problems. The rhinos became the flagship species or catalysts to these conservancies that have created major opportunity for the conservation of other wildlife species.

BOTSWANA

The Botswana situation parallels the Zimbabwean one in that the paperwork for rhino policy has been done but implementation has lapsed. Thus, to the extent that the SADC Rhino Conservation Programme funds the provision of expertise for strategy development in SADC range states, there must be some assurance that words will be translated into action in these countries. Perhaps the way to do this is to ensure that the strategy specifies an ongoing action planning process to set management targets that are measurable and which are subject to periodic review. The issue of what numbers of rhinos, and of what species, might be straying from Zimbabwe into Botswana appears to be an issue that might be investigated within the SADC Rhino Programme.

The Khama Rhino Sanctuary appears to be regarded as a "stepping stone" for the re-establishment of rhinos in the more extensive reserves. This concept of breeding rhinos, and gaining the necessary management experience, within a smaller area before embarking on more ambitious rhino restocking programmes is likely to be applicable in other range states such as Zambia and Mozambique, but the social and ecological problems associated with rhino management in small areas will also need to be taken into account.

NAMIBIA

Given that South Africa unavoidably has a complicated multi-agency administrative framework for rhino conservation, the smaller and well-integrated framework in Namibia is a more appropriate model for the rest of SADC. The concept of barter trading of rhinos for other valuable wildlife species is a pragmatic approach by the Namibian authorities and may well be relevant in other SADC situations.
A model for the sharing of the work required for successful rhino conservation is demonstrated by the productive relationship between the Namibian authorities and the Save the Rhino Trust, since the latter has been entrusted with the bulk of the rhino monitoring work in the Kunene Region. The community component of this work is the region's most advanced community initiative concerning rhinos.

Namibia has streamlined rhino custodianship on private land and provides more back-up for this scheme, in terms of professional involvement, than Zimbabwe (which first developed this concept) but does not appear to have used the scheme as a catalyst to the formation of extensive rhino conservancies at the outset of this scheme. The fact that small founder groups have been allocated to fairly small properties may become problematic in view of the needs for a high level of ongoing management to prevent overstocking and inbreeding, in a situation when government conservation funding is declining in real terms.

SWAZILAND

The rather confusing situation regarding which agency has the authority to represent Swaziland on rhino issues shows how important it is for SADC rhino range states to streamline their interactions with the SADC Rhino Conservation Programme by clearly identifying their focal points for this programme. Swaziland shows an interesting fusion of private sector interests with state conservation interests. Such arrangements can be very constructive (as appears to be the case in Swaziland) but sometimes the "tail wags the dog", unless the policy and practice of rhino conservation is very clearly specified in a strategy to avoid vested interests from distorting rhino conservation priorities at a local or even at a national level. Other SADC states that need to re-establish their rhino populations through rhino importations may well be enticed by private sector or NGO-sponsored deals to bring in rhinos, but need to be careful not to set uncomfortable precedents or put the rhinos in sub-optimum areas. The "rules of the game" need to be thought out and made clear **before** such situations arise.

ZAMBIA

The fragile situation with the white rhinos at Livingstone will hopefully improve rather than ending in extinction as was the case with the previous introduction of rhinos to Zambia, but this situation clearly shows the need for concerted and professional follow-up action, over a long period of time, to ensure the success of such introductions. The expertise and capacity realised within ZAWA in this situation could then be put to good use in any future re-introduction of black rhinos to Zambia.

MOZAMBIQUE

For the re-establishment of rhinos in Mozambique, it appears that the most promising route would be to incorporate such an initiative within a Transfrontier Conservation Area initiative (notably the Coutada 16 – Kruger NP linkage). This will be a slow process but would be likely to be more successful in the long run than any attempt to set up an "island" of introduced rhinos elsewhere in the country (particularly where remnant animals might be secured and reinforced with introduced rhinos). Similar considerations are likely to apply to Angola.

TANZANIA

The situation in Selous Game Reserve presents a particular challenge for rhino conservation. The surviving rhinos have escaped poachers primarily because of factors of natural protection (remoteness and dense vegetation). The challenge is to introduce rhino conservation measures in a way that does not strip away these protective factors. Any effort to set up a sanctuary, for instance, would have to be sustainably funded and effectively managed in order not to merely create a defined zone within which poachers could more easily find their prey. Thus, as rhino conservation plans are elaborated for this reserve, they will probably constitute a new model for rhino protection that may be applicable for any other remnant groups of rhinos that may be identified in Mozambique, Angola, Botswana or Angola.

MALAWI

The Liwonde project is a "living example" of a rhino re-introduction project that is being achieved through co-operation between SADC range states and as such warrants consideration within the SADC Rhino Programme to extract lessons for similar projects that might be undertaken in Zambia, Mozambique, etc. One such lesson seems to be that considerable preparatory work is required with neighbouring communities in order to ensure that the local socio-political climate is conducive.

ANGOLA

Due to the difficult situation prevailing in the country, and the lack of rhinos and the resources and expertise to conserve them, clearly any assistance from other range states in the region and from the SADC programme could be useful. The main question is where and how to start. Certainly better communications with all parties in Angola who might have a stake or involvement in enabling rhino conservation in the future are needed as a first step.

PART II
DETAILED COUNTRY REVIEWS

PART II DETAILED COUNTRY REVIEWS

This part of the report contains the main body of text of all the detailed country reviews, as compiled by the subtask executants, each following the agreed format or terms or reference for the conduct of the reviews (see Summary). There are ten chapters, one for each of the range states. The reviews each contain concept project proposals (in section 6 of each review) that were suggested during the review process either by representatives of the range state rhino management authority, or by SADC consortium members, or by the reviewer concerned. They are arranged in the order in which they were presented in the semester 2 workplan (Section 3.2.2, Tasks 1.2 – 1.4 to 1.2 – 1.13).

SOUTH AFRICA (Task 1.2 – 1.4)

The South African review is divided into two parts: the first part (**A**) is devoted to the areas and rhino populations under the authority of the North West Parks and Tourism Board (NWPTB); the second part (**B**) covers the areas and populations of all the other relevant national and provincial rhino management authorities, including the South African National Parks (SANP), and the KwaZulu-Natal Wildlife (KZNW).

A NORTH WEST PARKS AND TOURISM BOARD

Review by Keryn Adcock (Area visit: 26 - 29 August, 2000)

1 MECHANISMS FOR PLANNING AND COORDINATING NATIONAL RHINO CONSERVATION EFFORTS

1.1 Rhino Management Authority

North West Parks and Tourism Board (NWPTB, one of the South African provincial conservation agencies)

1.2 National Rhino Strategy

The NWPTB follows the Rhino Management Group's Conservation Plan for the Black Rhinoceros in South Africa (Brooks and Adcock 1997)

1.3 Action Planning

There is no action plan.

1.4 Coordination Mechanisms

Within NWPTB, the coordination of rhino conservation occurs at the management meetings within their individual parks or reserves, and at a higher level at Protected Area Management meetings (PAM). This is attended by the regional Heads, The heads of Park Management, the head of Security, of Human resources and of Ecological Services. The minutes and decisions of this meeting go to the CEO of NWPTB for ratification.

1.5 Focal Point

Rusty Husler (Protected Resources Manager) represents NWPTB on the Rhino and Elephant Security Group. He also attends meeting of the KwaZulu-Natal Rhino Security Group. Pieter Nel, (Head Manager: Ecological Services), represent NWPTB on the Rhino Management Group.

2 EXISTING MECHANISMS FOR COLLABORATION WITH OTHER RANGE STATES
(Excluding SADC Rhino Programme)

2.1 Current Bilateral Arrangements

NWPTB has ties with Botswana's conservation agency (DWNP). The co-ordination arrangements were originally formalized through high-level bi-lateral agreements at a Ministerial level. The initial dealings involved a donation of 5 white rhino to Khama Rhino Sanctuary (c. 1994). Upon monitoring their progress, a further 3 females were donated to improve the sex ratio and production potential. There are currently 18 white rhino at Khama RS. NWPTB are exporting one black rhino male to Malawi.

2.2 Previous Bilateral Arrangements

The Rhino and Elephant Security Group (RESG) was designed partly to liase with neighbouring states on common security issues affecting these species. Although the body appears to have currently lost momentum, there are plans to revitalise the RESG, and NWPTB feels this is very important. The funding of SADC representative attendance at RESG meetings is an important need.

3 RHINO POPULATION STATUS

3.1 Summary Statistics on rhino numbers, distribution and trends

NWPTB has rhino in 5 parks.

Madikwe	100 white rhino, +- 23 black rhino
Pilanesberg	280 white rhino, +- 55 black rhino
Borokalalo	33 white rhino
Botsalano	24 white rhino
Mafikeng	25 white rhino

All populations are healthy and productive.

3.2 Population monitoring and reporting

Madikwe rhino are monitored from annual aerial surveys, where all rhino (white and black) encountered are photographed and identified (where possible). Individual rhino histories are updated, and population estimates are made. Black rhino in particular are also monitored during daily field ranger patrols, special rhino patrols and ad-hoc sightings by tour guides from the lodges, and all sightings are added to the history files. Ground monitoring of white rhino is due to start, now that a fair proportion of the population have ID-kits/histories, built up from the aerial work. A special Rhino Monitoring Officer is in charge of coordinating ground rhino patrols.

Pilanesberg: Both white and black rhino are monitored by individual ID methods as for Madikwe. A special Trust fund was set up by Hans Hansen and Hanne Lindemann in Denmark, which provides funds to helicopter/ground survey and ear-notch both white and black rhino as needed. A special Rhino Monitoring Officer is in charge of coordinating ground rhino patrols.

For Borakalalo, Mafikeng and Botsalano, their white rhino are monitored by individual identification from sightings from routine ground patrols (usually dealing with rhino weekly) and those of volunteers (Friends of the "park", honorary officers). Numbers are also counted during annual helicopter game counts.

NWPTB has well-established duties to report annually on all game populations, including rhino, to the provincial auditors (annual game audit report). In addition, detailed reports on the Madikwe and Pilanesberg black rhino populations are provided to the RMG, according to their data report format.

There has been no poaching of rhino in any NWPTB park, thus no arrests or convictions.

3.3 Requirements for surveys and monitoring

Only Madikwe Game Reserve has unfulfilled needs regarding surveys and/or demographic monitoring to improve information on the status of their white rhino population, which is an important population in

AfRSG rating terms. This lack is a however not a definite constraint to the development and implementation of a national rhino conservation strategy and action plan.

They need funding to undertake ear-notching of black rhino calves, but especially of white rhino where the proportion of "clean" (unidentifiable) animals is increasing to exceed 50% of the population.

4 MANPOWER AND OTHER RESOURCES FOR RHINO CONSERVATION

4.1 Anti-poaching resources

Protected Area	*Area (km^2)*	*Field Rangers*	*km^2 per Field Ranger*	*Operating Budget (USD)*	*Operating Budget (USD) per km^2*	*4WD Vehicles*	*LDVs*
Pilanesberg	550		20	ca. 80,000	148	2	1
Madikwe	630		40	ca. 80,000	128	3	0
Mafikeng	48		8				1
Botsalano	48		10				1
Borakalalo	110		20				0
Mean			19.6		138		

Figures given for operating budget in the table above are approximate. Pilanesberg and Madikwe spend ca. R450,000 per year on maintaining their perimeter fences, which form a major barrier to poaching. These electrified fences (ca. 2.4 m high, to keep elephant and lion in), are checked in their entirety every day by private fencing contractors. In addition, parks staff undertake daily fence patrols specifically checking for security breaches that could indicate poaching threats. Other annual expenditure that relates to anti-poaching (not other park activities like capture, burning, erosion control, etc) is estimated as half their field expenditure: This is as follows for Pilanesberg, and is fairly similar for Madikwe:

R 132 000 for transport (km)
R 25 000 for equipment maintenance
R 5 000 for subsistence (camping out)
R 21 000 for uniforms.

Salary levels for scouts and junior officers: total package (incl. Pension/medical aid contributions)

Game Scout (field ranger 1): avg. R44 105 per year
Corporal (field ranger 2): avg. R51 988 per year
Sergeant (cadet Ranger): avg. R85 129 per year
Section Ranger (Warden): avg. R124 509 per year

4.2 Expertise available for specialised aspects of rhino management

Rhino tracking: Madikwe and Pilanesberg each have one dedicated rhino monitoring officer. Training and motivation of additional rhino monitoring staff are required in these areas. The other normal game scout staff in all parks has been described as lacking in training and motivation as needed for adequate rhino monitoring. The NWPTB's field staff training division is presently non-operational due to staff retrenchments.

Capture: Almost all captures are handled by outside, hired contractors. Budgets for this are assigned by the Park in annual budgeting, or are raised from donating agencies when the need arises. Capture firms used are reliable and experienced

Veterinary work: The Board has no in-house veterinarian, and all work is handled reliable and experienced by private veterinarians.

Ecological evaluations and demographic monitoring: There is a small team of scientific staff within NWPTB who are adequately qualified to undertake the necessary evaluations and monitoring, and who liase with park management on decision-making. Outside rhino experts are also involved in special rhino monitoring operations in each of Pilanesberg and Madikwe, and provide their professional input as required in their contracts with NWPTB. As the need arises, the advise of outside rhino experts is occasionally requested on specific issues by NWPTB.

4.3 Specialised equipment available for rhino management

Equipment for rhino capture and transport, and helicopter work, is contracted in as needed. Both Madikwe and Pilanesberg have good rhino bomas, and their own rhino crate that can be used to handle say isolated rhino in need of medical attention. The smaller parks do not have bomas.

5 PARTICIPATION OF NON-STATE AGENCIES IN RHINO CONSERVATION

5.1 Community Involvement

There is no direct involvement of communities surrounding parks in rhino conservation as such. However, all parks including Pilanesberg, but especially Madikwe, have active community liaison initiatives. The "Greater Madikwe Situation Assessment Report (Annex 1.12) by B Marobe, gives an idea of the kinds of initiatives, problems and community needs. The main thrust is to use the conservation areas to promote economic / infrastructure development, employment and entrepreneurial opportunities and skills development in communities, and also to thus benefit conservation by gaining political support and funding for the conservation area, and by gaining increased protection from poaching from the support from local people. The document also lists NGOs involved in these community development programmes.

There are tentative plans to provide white rhino to Lebatlane, a small reserve owned by the Bakgatla tribe. These would allow this reserve to generate income from trophy hunting of the rhino.

5.2 Local and International NGO Involvement

A trust fund was established by two Danish ecologists for black rhino monitoring needs, chiefly in Pilanesberg. Since about 1995 this has provided input worth around R30-40 000 per year mainly for annual aerial surveys and ear-notching programmes. Endangered Wildlife Trust has in the past assisted with funding for such activities, and Mazda Wildlife provides the use of a 4x4 vehicle for the duration of the Pilanesberg programme (1-2 months per year).

The Green Trust provided funds (c. R 70 000) for the translocation of 10 black rhino from Umfolozi to Madikwe in 1996. US Fish and Wildlife's Rhino and Tiger Conservation Fund provided some funding for compilation of the Madikwe white rhino identikits and individual histories (c. R12 000).

5.3 Private Sector Involvement

The private lodges within Pilanesberg and Madikwe provide small amounts of support (financial or accommodation) for specific rhino monitoring equipment / activities from time to time. Volunteers from the public such as Friends of Pilanesberg and various honorary officers provide some support through additional patrols and monitoring within the parks.

6 PROPOSED PROJECTS

6.1 Security

(i) Funding for the Rhino and Elephant Security Group - specifically funds are needed towards the costs of holding regular meetings (accommodation, food), and for transporting delegates from SADC countries to/from such meetings (air tickets).

(ii) In North West Parks, funding is required for three high-powered transponder readers: One for Madikwe, one for Pilanesberg and one for the Resource Security Officer (for province-wide use). With rhino translocations and ear-notching programmes, a high proportion of rhino in the province are fitted with transponders, as are all horns in storage. High-powered readers are needed to facilitate the tracing of rhino mortalities and horns recovered within parks and the wider province.

(iii) NWPTB is currently developing its security information system. This will contain GIS-linked information on park and neighbouring features (resource, infrastructure, personnel distributions etc), along with all security incidents. Equipment items such as upgraded computers, and GPS's for officers, printers/plotters, are needed for the major parks.

(iv) Radio equipment: Funding is needed to get the intra and inter-park "smart trunking" radio system (Q-trunk) fully operational. Specifically, additional masts are needed to provide the required coverage of NW areas.

(v) Good quality night-vision scopes for weapons and night-vision binoculars are needed for security monitoring after dark. In Madikwe and Pilanesberg.

(vi) Funds towards major repairs of the Pilanesberg perimeter fence are needed (estimated to cost R3.3. million). This fence was badly damaged in the record floods of late summer, 2000.

(vii) Funds are desired to purchase 2 "Quad" motorbikes (4-wheel motorbikes) for fenceline patrols (one for Madikwe and one for Pilanesberg).

6.2 Rhino Monitoring

(i) Running of courses for basic game scout training and rhino monitoring - this is needed for Pilanesberg and Madikwe game scouts. As NWPTB currently lacks training staff, funding may be needed to bring in someone to run the training courses.

(ii) the Louis Liebenberg -type "Tracker" palmtop systems are needed for game scout patrols, to capture patrol and sighting information in Pilanesberg and Madikwe.

(iii) Infrared lighting equipment ("black light") is needed for night time monitoring of rhino e.g. at waterholes. Internet cameras at waterholes could be explored as a monitoring tool.

(iv) Basic rhino monitoring equipment items such as binoculars, cameras, water bottles, are needed for all rhino parks, but especially Pilanesberg and Madikwe.

(v) Funding of the costs of carrying out rhino ear-notching programmes is required for Madikwe Game Reserve. (Helicopter hours and drugs for 10-15 rhino per year), to maintain the continuity of the individual ID-based monitoring.

(vi) The funding of 12% (c. R15 000) of the Madikwe annual game counts is sought. This is estimated as the amount spent on photographing (from the air) and compiling history updates on the individual white and black rhino of Madikwe.

(vii) Replacement 4x4 vehicle is needed for rhino monitoring officers to conduct rhino monitoring activities in Madikwe.

(viii) A "bursary" is needed towards the specialized, high-level training of apprentice Tswana rhino monitoring officers for Pilanesberg and Madikwe. This would involve monitoring training, training in computer/database upkeep for rhino data, provision of their equipment, and their education in further in-depth aspects of rhino conservation, attendance at national and international rhino meeting etc.

(ix) Gus van Dyk is currently working with overseas experts in advanced "radio tracking" systems - specifically those involving military satellite GPS / GIS tracking, and those involving GSM technology. Additional funding is needed to cover the capture-related costs of fitting such devices to rhino in field tests.

6.3 Community

Madikwe Game Reserve has an active, successful community development programme. This could be used as a test case or role model of community conservation links. Funding could be provided to bring community and park representatives from other SADC countries to learn about the Madikwe situation. (This idea could be expanded to actually create a forum or group comprising community representatives around rhino conservation areas, and facilitate their meetings and liaison to exchange ideas and develop new community conservation initiatives involving rhinos).

(i) Funding is needed for representatives from the Madikwe local communities to visit community conservation initiatives in other SADC countries (e.g. CAMPFIRE, Damaraland).

(ii) Currently all community conservation in NW is generic, and rhino specifically (on their own) are not used for community development or education, or as an issue requiring community cooperation and support. Some ideas were put forward which could bring rhino more strongly into the picture: Funding could be obtained to develop programmes for bringing community leaders into the parks, (providing food and transport), showing them rhino and rhino monitoring programmes in operation, and educating them on the issues around these animals' threatened status and approaches to their conservation. Funding would also be used to develop audio-visual educational material for such programmes.

(iii) NW has long had conservation clubs run at the schools, where education and activities around conservation took place, aided by the Board community liaison staff. With staff cutbacks, these have fallen into inactivity. Rhino could act as the focus to revive these in schools in the province. Specifically, funding could go towards educational material on rhino biology, rhino status and the role of conservation areas and communities in their conservation, and towards running inter-school competitions for the clubs (covering art, information posters, essays), providing prizes, and bringing children to parks to learn about rhino and other wildlife in their habitat. This idea could be expanded to other SADC countries with inter-school competitions and liaison developed at this level.

7 NATIONAL LEGISLATION AND POLICIES

7.1 Penalties

For North West province, legislation protecting rhino falls under the NW Parks Board Act of North West Province legislation (Annex 1.13). This reportedly depends on the old acts of the old Bophuthatswana homeland and Transvaal Provincial Administration territories, parts of which now make up North West Province. NWPTB staff have submitted proposals to the North West Province legislature to adopt the national Endangered Species Act (currently under review at a national level), which would then supersede the sections relevant to white and black rhino (among others).

Poaching convictions under this act would comprise the following:

For white rhino:
A fine of up to R 50 000 or imprisonment up to 5 years in the case of a first conviction; or in the case of a second or subsequent conviction, to such imprisonment without the option of a fine.

For black rhino:
In the case of a first conviction, a fine of up to R 100 000 or imprisonment up to 10 years in the case of a first conviction; or in the case of a second or subsequent conviction, to such imprisonment without the option of a fine, not exceeding 15 years.

7.2 Ownership of Rhinos

Ownership of black and white rhinos is permitted in the province (see Part B of South Africa Review).

7.3 Hunting and live sales of rhinos

Hunting of white rhino, and live sales of white and black rhino are permitted in the province. These operate as in the rest of South Africa under Cites restrictions.

8 DATA SOURCES

8.1 Names, addresses and contact details of all informants/interviewees

North West Parks and Tourism Board

Rusty Hustler, Resource Security Manager. PO Box 4488 Mmabatho 2735 North West Province, South Africa. Tel: 018386 2477 Cell: 083 469 3242

Pieter Leitner, Park Warden, Madikwe Game Reserve. PO Box 10, Nietverdiend 2874, North West Province, South Africa. E-mail: madikweadmin@yebo.co.za tel: 0183672 ask 2411. Cell: 083 630 3480

Bernard Marobe Senior Community Development Officer. Madikwe Game Reserve, PO Box 10, Nietverdiend 2874, North West Province, South Africa. E-mail: madikweadmin@yebo.co.za tel: 0183672 ask 2411. Cel1. 082 415 2338

Declan Hofmeyr, Ecological Support Services - Madikwe Game Reserve. PO Box 10, Nietverdiend 2874, North West Province, South Africa. E-mail: madikweadmin@yebo.co.za tel: 0183672 ask 2430.

Gus van Dyk, Field Ecologist - Pilanesberg National Park. PO Box 1201, Mogwase 0314, North West Province, South Africa. e-mail: gvandyk@nwpg.org.za Tel:+27 14-555-5357/8/9 Fax:+27 14-555-5525 Cell: 082 496 3970

Johnson Maoka, Park Warden, Pilanesberg National Park. PO Box 1201, Mogwase 0314, North West Province, South Africa. e-mail: jmaoka@nwpg.org.za Tel:+27 14-555-5357/8/9 Fax:+27 14-555-5525 Cell: 083 628 0629

Michael Crowther, Warden: Field Operations, Pilanesberg Game Reserve. PO Box 1201, Mogwase 1314, North West Province, South Africa. E-mail: mcrowther@nwpg.org.za Cell: 082 773 0427

Pieter Nel, Manager: Ecological Services. Pilanesberg National Park, PO Box 1201, Mogwase 0314, North West Province, South Africa. e-mail: hpnel@mweb.co.za Tel:+27 14-555-5357/8/9 Fax:+27 14-555-5525 Cell: +27 83 654 8 415

9 TRADE AND IMPORT/EXPORT OF LIVE RHINOS

9.1 CITES Management Authority

The National CITES authority in Gauteng is used to handle permits for trophy horn exports / imports, and export of live rhino.

9.2 Veterinary Controls

No information available.

9.3 Past Imports and Exports

To data, NWPTB has exported 8 white rhino to Botswana, and is in the process of exporting 1 black rhino male to Malawi (together with some rhino from South African National Parks).

10 HORN STOCKS

10.1 Control, Storage and Identification

Horn stocks are controlled as required by CITES regulations, as well as the more stringent requirement of the NW auditor general. All NWPTB's horn is sent for storage in a (secret) vault, each horn is implanted with a microchip transponder and has an external numbered tag. All stock is accounted for to date. There is a need to notch both white and black rhino to keep a high proportion of identifiable individuals in the population for adequate monitoring.

10.2 Involvement in AfRSG rhino horn fingerprinting project

NWPTB have provided extensive horn samples for the horn fingerprinting project.

B SANP, KZNW and Other Areas

Review by Richard Emslie (AfRSG) (Area visits: 31 August – 1 September, 18 – 29 September, 2000)

1 MECHANISMS FOR PLANNING AND COORDINATING NATIONAL RHINO CONSERVATION EFFORTS

1.1 Rhino Management Authority

The situation regarding the control of nature conservation in South Africa is very complicated, and is confusing to many used to a simple model where a single government management agency is responsible for all nature conservation within the country.

While South African National Parks (SANP) control all the National Parks within the boundaries of the old Transvaal, Cape and Orange Free State provinces, they have never been represented within the old province of Natal. The South African provinces also have responsibility for nature conservation within their boundaries, with the exception of SANP's Parks. However, not all National Parks are managed by SANP. Pilanesberg and Bororkalalo National Parks are exceptions since they were created by the then nominally independent homeland of Bophuthatswana, and since its re-incorporation back into South Africa these National Parks have been managed by the local provincial management agency, the North West Parks and Tourism Board.

With the incorporation of the nominally independent homelands back into South Africa at Independence, and the creation of nine new provinces, a number of the old provincial conservation agencies have either amalgamated or ceased to exist. For example, the old Natal Parks Board and Bop Parks Board no longer exist. Many new nature conservation agencies have also been created since independence. In the one province (Eastern Cape), two different provincial agencies manage different parts of the same rhino reserve – fortunately on a cooperative basis!

The model for the different agencies varies. Some provinces and the SANP have parastatal boards that can retain any revenue they generate, while others are government departments. Levels of grants from the State vary considerably from area to area. To complicate matters further, at a national level, the Department of Environmental Affairs and Tourism (DEAT) is the country's overall nature conservation authority, with all the provincial agencies and SANP feeding into it to develop national policies.

In addition, wildlife can be privately owned in South Africa, and there are many white and some black rhino populations on private game reserves throughout the country. Provincial management authorities are responsible for overseeing nature conservation on private land in their areas.

The 10 formal conservation agencies are currently:

- South African National Parks (SANP),
- KwaZulu-Natal Wildlife (KZNW),
- North West Parks and Tourism Board (NWPTB)
- Eastern Cape Nature Conservation (ECNC)
- Gauteng Directorate of Nature Conservation (GDNC)
- Northern Province Dept of Land, Agriculture & Environment, Chief Directorate of the Environment (NPCDE)
- Free State Department of Environmental Affairs and Tourism (FSEAT)
- Western Cape Nature Conservation (WCNC)
- Mpumalanga Parks Board (MPB)
- Northern Cape Nature Conservation Service (NCNCS)

The first three organizations, SANP, KZNW, and NWPTB manage most (but not all) of the larger AfRSG rated *Key* and *Important* rhino populations on state land, and for this reason are examined in more detail. The separate report by Keryn Adcock details the situation in NWPTB while this report deals with the rest of the country. With the exceptions of Western Cape, which does not currently have any rhinos, and the Free State (where attempts to contact Free States RMG representative Dr Pierre Nel were unfortunately unsuccessful) representatives of the other eight management agencies were contacted.

An NGO, the African Rhino Owners Association (AROA) has been representing the interests of many private rhino owners. However, recently AROA has largely been inactive, while discussions continue to see whether it should continue in its present form, or whether rhino owners should get-together to form a company to manage their industry. Dr Kobus du Toit (who has been dealing with much of AROA's business since the resignation of the previous Chairman Clive Walker), and Mr Daan Buijs were also contacted with regard to the latest situation in the private sector.

The Rhino Management Group of southern Africa (RMG) was formed in 1989 to implement the conservation plan for the black rhinoceros in South Africa and Namibia. This plan was adopted early in 1989 with the support of 19 conservation agencies and NGOs in the two countries. Participation was extended to Swaziland and Zimbabwe in 1996, thereby strengthening the RMG's regional character although Zimbabwe only commenced active participation in October 2000. The original joint South African/Namibian black rhino conservation plan has since been succeeded. While South Africa and Namibia now operate under their own country plans, the RMG member countries continued to benefit through the development and sharing of rhino conservation philosophies, strategies, and information. To date Namibia has never missed an RMG meeting. The RMG also continues to guide and give effect to the implementation of the revised 1997 South African black rhino conservation plan (Annex 1.1). The RMG comprises representatives of all state and provincial nature conservation authorities in each country, as well as private rhino owners and custodians and rhino experts.

Since its inception, the RMG has met regularly to discuss strategic issues and review progress towards meeting rhino conservation goals. Its 13th meeting will be held in October 2000. The group coordinates status reporting, and synthesises standardised annual status reporting throughout all black rhino populations in the original RMG region, enabling progress towards metapopulation management goals to be assessed every 1-2 years. For security reasons the individual reserve status reports and status report summaries are confidential, although biological information can be used to the benefit of rhino conservation.

Over the years, the RMG has also held a number of workshops that have provided direction and standards for rhino monitoring, boma construction, property assessments, habitat evaluation, private ownership, field ranger training, and security issues. The Southern African Rhino and Elephant Security Group (RESG) grew out of what was originally a subcommittee of the RMG dealing with security, and whose chairman sat as an RMG member. The chairman of the RESG sits on the RMG.

The South African Police Service has a specialised Endangered Species Protection Unit (ESPU), which investigates many of the rhino related cases, and assists and works with many of the provincial nature conservation agencies and private rhino owners.

1.2 National Rhino Strategy

The current South African black rhino conservation plan (Annex 1.1) has been endorsed by the relevant agencies, and the RMG gives effect to the plan.

Until recently, despite its Conservation successes, South Africa has not had a white rhino policy. Although the RMG deals only with black rhino, it was asked to, and did facilitate a workshop, attended by all relevant stakeholders, to develop a national white rhino conservation strategy for South Africa. The draft version of the strategy produced at this workshop is found in Annex 1.2. All those who attended the workshop were requested to start implementing the strategy as soon as possible. This document was submitted to DEAT who then sent it out widely for comment. The strategy (with slight modifications) has recently been approved at a meeting of the national minister and provincial ministers for conservation (MINMEC). A copy of this revised version of the strategy is found in Annex 1.3.

Internally, SANP has its own species conservation plan for black rhino. An outdated draft version (August 1998) of this plan is found in Annex 1.4. While this is still in draft form and needs to be updated to take into account subsequent developments concerning Addo in effect much of this draft plan is being implemented.

1.3 Action Planning

Within South Africa, the detailed day-to-day management is controlled at an individual reserve/ conservation agency/rhino owner level. With so many management authorities, a national action plan would be seen as completely inappropriate. Most rhino conservation management issues are dealt

with at a reserve or management agency level, and those of a more national level (pertaining to black rhino) are dealt with through the RMG and its activities. The national black rhino conservation plan however is fairly detailed in its recommended strategies, but the responsibility for implementation of planning still rests with the individual agencies themselves.

1.4 Coordination Mechanisms

The RMG has been described above. The RESG has not been functional recently but there is much support to resuscitate it. Lack of finance had been the major constraint preventing meetings from taking place.

KwaZulu-Natal has a KZNW Rhino Security and Management Group. This group meets every four months and includes officers from each KZNW reserve, investigators, and the head of the SAPS ESPU (Peter Lateghan), who attends every second meeting. SANP's Ken Maggs and NWPTB's Rusty Hustler are routinely invited and attend. This meeting provides a link between field management and the undercover wildlife investigators, and is used to help coordinate pooled KZNW rhino funding applications to WWF. In KZNW parks, reserve based management meetings of management and research staff make recommendations on annual rhino offtakes. Final decisions on rhino offtakes and where the KZN rhinos are to go are made at an annual meeting at KZNW Head Office. Those wanting to bid for black rhinos on auction have to have the suitability of their properties assessed before they are allowed to bid. Occasional meetings are held at park level to review and discuss rhino monitoring data and programmes. Park researchers and management staff attend these meetings.

In the SANP an annual game capture forum meeting is held at the end/beginning of the year. This meeting includes park wardens and scientific staff and decides on capture, selling and movement of rhinos for the year. Any money raised from rhinos sold on auction is deposited in a development fund and used to buy more land. Thus for SANP, rhino sales are a form of asset-swap – game for land.

SANP's Kruger National Park has a standing committee for Nature conservation and this committee reviews requests for animals. It is made up of wildlife managers, senior research staff, regional rangers and the chief ranger. A KNP Management Committee also sits and is a decision-making body. Other SANP rhino parks (generally termed SANP Southern Parks) have a rhino steering committee, which meets once every two months. This committee comprises senior staff including Dr Anthony Hall-Martin (to be succeeded by Dr Hector Magome), Dr Mike Knight, Dr Pete Morkel and Park Wardens. Meetings of this committee are usually held at Addo NP.

1.5 Focal Point

Dr Martin Brooks of KZNW is the chairman of the RMG. Dr Mike Knight of SANP is the elected official South African representative on the AfRSG and should therefore be the focal point person for the SADC rhino programme. Mr Clive Walker is a focal person who can be contacted regarding rhino conservation on private land. Annex 1.5 gives the latest contact details and names of all members of the RMG (including Drs Brooks and Knight, and Mr Walker). Each formal nature conservation agency has one representative on the RMG.

1.6 Potential for facilitation by SADC rhino programme

None is required.

2 EXISTING MECHANISMS FOR COLLABORATION WITH OTHER RANGE STATES
(Excluding SADC Rhino Programme)

2.1 Co-ordination with other range states

SANP have taken six *D.b.michaeli* up to Tanzania, bringing one orphaned bull back to introduce some new blood. SANP has been the key player in the founding of the population of *D.b.minor* in Liwonde in Malawi, although NWPTB recently also donated an additional black rhino bull. In the past the old Natal Parks Board assisted Botswana search for, catch and consolidate outlier rhinos. NWPTB have also donated some white rhino to Botswana. A breeding group of 28 black rhino was sold by KZNW to Malilangwe, Zimbabwe in 1998. All the southern white rhino in world are derived originally from Umfolozi animals. These animals have been translocated widely around the world, including re-establishing the species in areas where it had gone extinct.

Formalised structures meet to discuss shared security concerns between Tembe and Ndumu Game Reserves in South Africa and the Mozambican authorities. Ken Maggs of SANP's ECIS also works with closely on law enforcement matters with Mozambican authorities outside the eastern Kruger NP boundary.

2.2 Existing commitments with other SADC range states

Details were not available.

3 RHINO POPULATION STATUS

3.1 Summary Statistics on rhino numbers, distribution and trends

The following are the latest statistics for South Africa (compiled by the AfRSG). The private reserves are not named for security reasons.

Black rhino:

SOUTH AFRICA *(3 subspecies)*		Area	RC/PE	Prob	SG	Total	Trend	Density	
D.b. bicornis									
Addo E. NP (Buffelskuil area)	S	67 km^2	6			6	Stable	0.090	
Addo E. NP (Elephant camp)	S		14			14	Stable		
Addo E. NP (Modderfontein)	S		7			7	Stable		
Hei!-Garib NP (Vaalbos)	S	181 km^2	5			5	Stable	0.028	
Private #	P	680 km^2	10			10	Up	0.031	
(Subtotal D.b. bicornis)		**928+** km^2	**42**			**42**	**Up**		
D.b. michaeli									
Addo E. NP (Bomas & Botanical R)	S		5			5			
Addo E. NP (Kleinvlak & Paddock)	S		9			9			
Karoo NP	S	7 148 km^2	6			6	New		
Private #	P	300 km^2	12			12	New		
(Subtotal D.b. michaeli)		**7448+km^2**	**32**			**32**	**Up**		
D.b. minor									
Atherstone Game Reserve	S	229 km^2	8			8	Up	0.035	
Gt Fish River Reserve (SK/AV	S	220 km^2	48			48	Up	0.218	Imp1
area)							Up	0.013	Key1
Greater Kruger Nat. Park (State	S	19 485 km^2	82	148	(49)	230	Up	0.011	
area)	S	965 km^2	385			385	Stable	0.399	Key1
Hluhluwe-Umfolozi Park	S	297 km^2	42			42	Down	0.141	Imp1
Ithala Game Reserve	S	600 km^2	24			24	Up	0.040	Imp1
Madikwe Game Reserve	S	420 km^2	18			18	Down	0.043	
Marakele National Park	S	368 km^2	78			78	Down?	0.212	Key2
uMkhuzi Game Reserve	S	101 km^2	24			24	Down?	0.238	Imp1
Ndumo Game Reserve	S	550 km^2	48			48	Up	0.087	Imp1
Pilanesberg National Park	S	300 km^2	21			21	Down?	0.070	Imp1
Tembe Elephant Park	S	104 km^2	12			12	Stable	0.115	
Tewati Wilderness (E..Shores)	S	48 km^2	8			8	Down?	0.167	
Weenan Nature Reserve	P	160 km^2	19			19	Up	0.119	
Private #	P	22 km^2	10			10	Down?	0.454	
Private #	P	135 km^2	9			9	Stable	0.067	
Private #	P	25 km^2	5			5	Down	0.200	
Private #	P	100 km^2	6			6	Stable	0.060	
Private #	P	50 km^2	5			5	?	?	
Private #									
(Subtotal D.b. minor)		**24 179+ km^2**	**852**	**148**	**(49)**	**1000**	**Up**		
Total All subspecies		**32 555+ km^2**	**926**	**148**	**(49)**	**1074**	**Up**		

White rhino:

		Area	RC/PE	Prob	SG	Total	Trend	Density	
SOUTH AFRICA									
Andover Game Reserve	S	70 km^2	16			16	Down	0.229	
Atherstone Game Reserve	S	229 km^2	26			26	Up	0.114	Imp1
Bloemhof Game Reserve	S		1			1	New		
Borakalalo National Park	S	120 km^2	40			40	Up	0.333	Imp1
Botsalano Game Reserve	S	80 km^2	26			26	Stable	0.325	Imp1
D=Nyala Game Reserve	S	80 km^2	3			3	Down	0.038	
Dweza Nature Reserve	S	39 km^2	8			8	Up	0.205	
Great Fish River Res. (Double Drift)	S	230 km^2	13			13	Up	0.057	
Greater Kruger NP (State Area)	S	19 485 km^2	5073			5073	Up	0.260	Key1
Vaalbos National Park (Hei!-Garib)	S	181 km^2	3			3	Up	0.017	
Hluhluwe-Umfolozi Park	S	965 km^2	1649			1649	Up	1.709	Key1
Ithala Game Reserve	S	297 km^2	60			60	Down	0.202	Key2
Koppies Game Reserve	S		7			7	Up		
Letaba Ranch	S	414 km^2	13			13	Down	0.031	
Ligwalagwala	S		1			1	New		
Loskop Dam Nature Reserve	S	133 km^2	34			34	Down	0.256	Imp1
Madikwe Game Reserve	S	600 km^2	98			98	Up	0.163	Key2
Mafikeng Game Reserve	S	50 km^2	22			22	Up	0.440	Imp1
Manyaleti Game Reserve	S	256 km^2	23			23	Down	0.090	Imp1
Marakele National Park	S	420 km^2	19			19	Stable	0.045	
Maria Moroka National Park	S	60 km^2		4		4	?	0.067	
Mkuzi Game Reserve	S	368 km^2	112			112	Stable	0.304	Key1
Mpofu Game Reserve	S	85 km^2	9			9	Stable	0.106	
Mthethomusa Game Reserve	S	80 km^2	17			17	Down	0.213	
Ndumo Game Reserve	S	101 km^2	50			50	Stable	0.495	Imp1
Nwanedi National Park	S	70 km^2	10			10	Up	0.143	
Parani Conservancy	P		5			5	New?		
Pilanesberg National Park	S	550 km^2	166			166	Stable	0.302	Key1
Pongolapoort Biosphere Reserve	B	58 km^2	19			19	Up	0.333	
Rolfontein Nature Reserve	S	50 km^2	8			8	Stable	0.160	
Sandveld Nature Reserve (Josina & Lake Warden)	S	147 km^2	11			11	Stable	0.075	
Soetdoring Nature Reserve	S		2			2	New		
Songimvelo Nature Reserve	S	350 km^2	33			33	Stable	0.094	Imp1
Spioenkop Nature Reserve	S	30 km^2	21			21	Stable	0.700	Imp1
Tembe Elephant Park	S	300 km^2	25			25		0.083	Imp1
Thomas Baines Nature Reserve	S	10 km^2	3			3		0.300	
Tsolwana Game Park	S	100 km^2	16			16		0.160	
Weenan Nature Reserve	S	48 km^2	39			39		0.973	Imp1
Willem Pretorius Game Reserve	S	120 km^2	21			21		0.175	Imp1
Greater Kruger (Pvt Reserves)	P	1 928 km^2	266			266		0.138	
Other Pvt & biosphere res. (N=140)	P	4 428+ km^2	1001			1001		0.226	
Private new #1 (#73)	P	300 km^2	92			92		0.307	Key2
Private new #10	P	400 km^2	34			34		0.392	Imp1
Private new #11	P	300 km^2	37			37		0.123	Imp1
Private new #12	P	100 km^2	35			35		0.350	Imp1
Private new #13	P	46 km^2	17			17		0.370	
Private new #14	P	100 km^2	16			16		0.160	
Private new #15 (#69)	P	59 km^2	24			24		0.407	Imp1
Private new #16	P	70 km^2	19			19		0.271	
Private new #17	P	353 km^2	22			22		0.062	Imp1
Private new #2 (#76)	P	50 km^2	40			40		0.800	Imp1
Private new #20	P	100 km^2	20			20		0.200	Imp1
Private new #of24	P	25 km^2	27			27		1.080	Imp1
Private new #26	P	80 km^2	38			38		0.475	Imp1
Private new #3 (#152)	P	168 km^2	52			52		0.310	Key2
Private new #4	P	320 km^2	56			56		0.175	Key2
Private new #5 (#89)	P	70 km^2	40			40		0.571	Imp1
Private new #6	P	55 km^2	40			40		0.727	Imp1
Private new #7	P	40 km^2	41			41		1.025	Imp1
Private new #8 (#79)	P	25 km^2	18			18		0.720	
Private new #9	P	120 km^2	33			33		0.275	Imp1
Zoo nature reserves (N=7)	Z	68 km^2	24			24		0.353	
Municipal reserves (N=7)	M	?		39		39			
Defence Force reserves (N=2)	D	50 km^2	17			17		0.34	
Total		**35 431 km^2**	**9 711**	**43**		**9 754**			

3.2 Population monitoring and reporting

Rhino monitoring approaches vary depending upon the species, size of the area and local vegetation and topography. For the most part black rhino populations are monitored using individual ID techniques. In a number of larger populations where all animals are not known, and a fraction of so-called clean animals (without any obvious identification features) occur, Bayesian Mark-Recapture RHINO software has been used to derive population estimates with confidence levels. ID work is normally ground based but aerial ID photography has been routinely used in some parks (e.g. Pilanesberg & Madikwe and most SANP parks). In Hluhluwe-Umfolozi Park, the white rhino are monitored using distance sampling to analyse sighting data obtained along cut lines walked throughout most of the park. Point based distance estimation is used in the Park's Wilderness Area.

In Kruger NP white rhino numbers are estimated using a 15% aerial sample survey count analysed using distance-sampling methods to estimate undercounting biases and confidence levels. Black rhino in the park are intensively monitored annually by helicopter in study area of approximately 1000 km^2, with photos being taken of black rhino in other areas during other park wide elephant and buffalo surveys. It is shortly hoped to synthesise and analyse the available data and photographs to come up with an improved population estimated for the park.

Every year each black rhino population is expected to submit an annual status report to the RMG. Thus for black rhino it has been possible to produce and/or population estimates since 1989/90. From time to time these status reports are then synthesised and a summary report compiled which provided much useful comparative biological data. With the exception of the biological data that can be used for the benefit of rhino conservation, these status reports and summary reports are confidential and therefore cannot be appended as part of this report. However, if the RMG Chairman gives permission, a copy of the latest confidential status report summary for South Africa will be made available to the SADC rhino programme co-ordinator for his personal information. Status reports are submitted according to set formats that are available upon request from the chairman of the RMG, Dr Martin Brooks. White rhino numbers on private land are assessed from time to time, with the last survey being undertaken just over a year ago. WWF has assisted AROA undertake these surveys. Nationally, white rhino numbers are compiled by the AfRSG country representative about every two years, just prior to each AfRSG meeting.

KZNW has been successful in arresting and convicting a number of rhino poachers and dealers. Sentences of 10 years, 6 years and R100, 000 have been handed down in recent years for rhino crimes. In Kruger NP there have also been a number of successful convictions for rhino poaching and one poacher convicted of killing an elephant and two rhinos was sentenced to 30 years (maximum 10 years on each count) without the option of a fine. Some poaching in Kruger and in adjacent private reserves has been by Mozambicans. In one case near Crocodile Bridge in KNP a rhino was shot for both horns and meat. While there has been no rhino poaching in SANP's other rhino parks some horn tips were removed from a vet's drug box. However, the thief was found, arrested and dismissed and a court case is now pending.

In Northern Province a ranger has been arrested for illegally trading in rhino horn. There has been no rhino poaching in the Eastern Cape or North West Province. In Gauteng there have been 8 cases of attempts to deal in horn, but sentences have been low (R15,000). The future use of expert witnesses may help increase sentences in future. Wildlife investigators continue to detect a real interest by criminals in getting illegal horn, and feel it is therefore imperative that existing law enforcement efforts be maintained to keep a lid on the situation. Numbers of rhino poached in South Africa by year are given in Annex 1.7 while numbers of rhino and elephant poached in KNP are given in Annex 1.10.

3.3 Requirements for surveys and monitoring

Extra funding is required for activities such as ear-notching to help improve/add to existing rhino monitoring programmes. Although it would be nice to have more information on black rhino in Kruger outside the Park's large intensively monitored black rhino study area, given the low density is relative to carrying capacity this is not a constraint to the development and implementation of the national rhino conservation strategy. However a synthesis of all available photographs and data would improve the quality of the park's black rhino population estimate. The status of white rhino on private land also needs to be assessed at regular intervals. Buijs estimates a survey would cost in the region of R15,000.

4 MANPOWER AND OTHER RESOURCES FOR RHINO CONSERVATION

4.1 Anti-poaching resources

Tony Conway compiled the following data on manpower and other resources for KZNW rhino areas:

Protected Area	*Area (km^2)*	*Field Rangers*	*km^2 per Field Ranger*	*Operating Budget (USD)*	*Operating Budget (USD) per km^2*	*4WD Vehicles*	*LDVs*
Hluhluwe	300	38	7.9	66,667	222	4	1
Umfolozi	660	46	14.3	96,794	147	4	0
Ithala	297	34	8.7	52,520	177	4	1
Weenen	50	5	10	14,512	290	1	1
Tembe (Incl Sileza	300	31	9.7	63,725	212	6	0
Ndumo	101	29	3.8	46,928	465	3	3
Umkhuze	370	52	7.1	40,974	111	6	2
Mean			8.79		232	4	

Manpower densities are much lower in the large Kruger NP (state area = 19,485 km^2), which has approximately 200 field rangers, 18 section rangers and four regional rangers. SANP's Environmental Crime Investigation Service is also based in KNP. Each of the 18 section rangers and four regional rangers has 2 vehicles giving a total of 44 for park field staff. Field rangers receive a bicycle allowance enabling them to always have a fully working bicycle. Field patrols alternate between walking and bicycle patrols. On average a KNP section is about 1,083 km^2 and has 6 field rangers on duty, 2 on leave and 1 section ranger translating to an effective field ranger density of 120 km^2 per field ranger. Patrols are more concentrated around Park boundaries so effective manpower densities vary throughout the KNP. Salaries for field rangers in KNP range from R20,556-33,600 p.a.; for Corporals from R21,900-37,700, for Sergeants from R23,300-42,600 and for section rangers from R58,400-R87,100. The total budget for wildlife management in KNP is R24m of which about R17m are salaries.

The Great Fish River Reserve is spilt in two by a major river. The southern Sam Knott/Andries Vosloo area of 220 km^2 is managed by Eastern Cape Nature Conservation and only has 9 field rangers. The 200 km^2 Double Drift area across the river is managed by the Eastern Cape Tourism Board and has 30 field rangers (including gate guards). The two management agencies cooperate and rangers from the Double Drift area have assisted Eastern Cape Nature Conservation Staff. Limited budgets result in Eastern Cape Nature Conservation vehicles standing idle for periods when budgets run out. Northern Province indicated it was understaffed. Declining government subsidies may impact on future expenditure and staffing levels in a number of management authorities.

4.2 Expertise available for specialised aspects of rhino management

South Africa is well off with regards to available expertise. There are a number of experienced rhino vets, rhino capture teams, a builder and developer of rhino radio-collars, and number of ecologists experienced in rhino ecological evaluations, and there is specialized expertise in the field of rhino population estimation and monitoring. There are also experts skilled in investigating the scene of a rhino crime and in obtaining forensic evidence. In addition to the ESPU of the South African Police Service many conservation agencies have their own specialised investigative staff and informer networks. A number of parks in North West, Mpumalanga and KZNW have the capacity to routinely identichip both rhinos and horns using the same make of transponder.

4.3 Specialised equipment available for rhino management

South Africa is well off with regards to available equipment in terms of bomas, capture trucks, darting equipment, transponder readers, transporters that can move 6 rhino at once etc. Helicopters are widely available but are normally hired for such operations.

A new Centenary Game Capture centre has just been opened in Hluhluwe-Umfolozi and includes new R5 million rhino bomas, which replace the old Umfolozi rhino bomas. Kruger National Park also has a very sophisticated game capture centre with the capacity to handle large numbers of rhinos while Pilanesberg has boma facilities for routine handling and treating of rhino.

5 PARTICIPATION OF NON-STATE AGENCIES IN RHINO CONSERVATION

5.1 Community Involvement

In KZNW visitors pay a community levy, which goes to the traditional authorities (meeting of Amakhosi) to decide how to spend the money. So far R9 million has been raised provincially in KZNW with R1.4 million coming from Hluhluwe-Umfolozi Park. Local Boards are about to be set up for many of the major rhino reserves in KZN These local boards provide away to legislate for community involvement in being part of Park management planning and deciding how to use the community levy. Relevant sections of the KwaZulu-Natal Nature Conservation Management Act can be found in Annex 1.8.

SANP has a social ecology section which liases with local communities. Effort is being targeted towards to exploring ways to economically empower local communities and create opportunities in tourism. Recently moves are being made to enhance communication with communities around Kruger NP through political channels and elected community representatives and development forums. In SANP's other parks most community initiatives are ad hoc except for Addo, which has a Forum with representatives from Industry, Agriculture, Eastern Cape Nature Conservation, SANP and local communities.

5.2 Local and International NGO Involvement

This varies from organisation to organisations and Park to Park. Of the more major funders, WWF provides significant support to rhino conservation projects in both Kruger National Park, and KZNW rhino reserves. A Danish NGO assists with rhino monitoring in NWPTB. US Fish & Wildlife's Rhino and Tiger Conservation Fund has also supported the number of rhino conservation projects in Kruger NP, SANP's southern Parks, as well as parks in KZNW, NWPTB, Mpumalanga and Eastern Cape, although the upper level for most individual RTCF grants is US$30,000. The Rhino and Elephant Foundation, Leslie-Hill Trust, IFAW and the Humane Society of the US have funded some SANP land purchases. NGO's and private individuals in particular have and are playing a major role in the expansion and consolidation of the Greater Addo N.P. with at least R14m being spent on land purchases to increase the size of the conservation area. The long-term goal at Addo is to consolidate an approximately 3,500 km^2 area of land covering 6 terrestrial biomes to create an area with the potential for a large population of *D.b.bicornis* outside of Namibia.

5.3 Private Sector Involvement

Both black and white rhinos can be privately owned. In 1999 the private sector in South Africa conserved an estimated 1990 white and 76 black rhino. With the necessary provincial conservation agency approval and permits, bought sold or moved around the country. White rhino can also be sold overseas to approved destinations. Record white rhino prices were fetched at the 2000 Hluhluwe Game Auction.

At this year's Hluhluwe Game Auction in KwaZulu-Natal, South Africa, the 42 white rhinos sold fetched record prices averaging R200,238/rhino (~$29,200) ranging from R 125,000 (~$18,250) to R345,000 (~$50,365) per animal. This represents a four and a half fold increase in price since 1996 and an increase of almost 70% on last years price. The founder breeding group of six black rhino also fetched the highest price since 1992 at R375, 000 ($54,750) each. The total turnover at the auction was R8.41 million (~$1.23m) for the 42 white rhino and R2.25 million for 6 black rhino. Rhino accounted for 70.65% of turnover. White rhinos sold at an earlier auction in 2000 by SANP fetched about R150,000 each.

The total area of land are available for rhino conservation, and hence overall white rhino carrying capacity will to some extent depend upon economic incentives for the private sector and local communities to conserve game and in particular rhino. There is an urgent need to improve the controls and recording of horn stockpiles on private land. AROA is currently not functional and there is also a need to build a body to represent the private sector as well as undertake surveys of the status of rhinos on private land at regular intervals of. In the case of Kruger NP, the fences between it and a number of large private reserves on its western boundary have been taken down increasing the effective area of the Park. A joint KNP/Private Sector Management Committee oversees this cooperative arrangement.

6 PROPOSED PROJECTS

All relevant projects suggested during the review have been added to the SADC rhino co-ordinators list of projects for the consortium meeting (Semester 2 report: Annex H). There was very strong support from the field and wildlife investigators in many conservation agencies for the continued development of horn fingerprinting techniques. There was also strong support from the field for the revision of RHINO software (not just from South Africa). Projects were proposed to develop the technology to analyse DNA in rhino horn and tissues both for security reasons (to match horn to carcass for use in court cases) and for genetic analyses of small populations as an aid to improved metapopulation management. A copy of one of these proposals can be found in Annex 1.12.

The development of a possible regional intelligence database building on existing KZNW work was supported and may involve other countries. The need to facilitate the holding of the next RMG meeting was identified and in Semester 5 funds will be required to produce the next RMG Status report summary. The need for the development and operation of a regional rhino transponder database was identified. Kruger's Danie Pienaar was keen to study post release behaviour of black rhinos in Kruger are to receive additional animals. Kobus du Toit and Daan Buijs identified the need for another white rhino status survey on private land. Gauteng wished to share lessons learnt in court cases and to obtain information on sentences handed down to assist in getting bigger sentences in court.

7 NATIONAL LEGISLATION AND POLICIES

The provinces and National Parks have their own the wildlife legislation, although in recent years there have been increasing attempts to harmonise wildlife legislation and make it consistent at a national level. In terms of rhino penalties, those convicted face of find of up to R100,000 and/or 10 years imprisonment. Annex 1.9 gives details of the relevant penalties for rhino crimes under the 1976 National Parks Act.

8 DATA SOURCES

8.1 Names, addresses and contact details of all informants/interviewees

Kruger National Park
Mr Danie Pienaar, Manager, Scientific Services, Kruger NP, dpienaar@parks-sa.co.za
Mr Wikkus van der Walt , Rare Biota Biologist, 013 735 4325 wikus@parks-sa.co.za
Dr Willem Gertenbach, General Manager Nature Conservation, Kruger NP
Mr Ken Maggs, Head Environmental Crime Investigation Services (ECIS) for the whole of SANP

Southern National Parks Office (all other SANP National Parks excluding Kruger)
Dr Michael Knight, Manager, Scientific Services, Southern National Parks, South African country representative on the AfRSG, SANP rep on the RMG. mknight@upe.ac.za 041 845 1471
Dr Guy Castley, Animal Ecologist Scientific Services, Southern National Parks (Annex 1.6)
Dr Graham Kerley, Director Terrestrial Ecology Research unit, University of Port Elizabeth (Annex 1.6)

KwaZulu-Natal Wildlife
Mr Tony Conway, Chief Conservator, Zululand Reserves and Chair of KZN Rhino Management and Security Group – who obtained information from Wardens of individual reserves. 033 845 1327
Mr Drummond Densham, Regional Head, and Chairman of the Rhino and Elephant Security Group of Southern Africa (Annex 1.5) 033 845 1394
Mr Rod Potter - Head Law Enforcement, Zululand 033 5620011 or 082 732 8843
Mr Simon Pillinger – Investigations c/o 031 206 1533
Mr Bradley Poole – Zululand Administrative Officer 033 845 1342
Miss Sharron Hughes – Permits Officer 033 845 1324

North West Province
See report on NWPTB (A., above)

Eastern Cape
Mr Brad Fike, Eastern Cape Nature Conservation RMG representative 046 662 7909

Gauteng
Mr Daan Buijs (Author of 4 of 5 surveys of status of white rhinos on private land) 083 392 8656 or 011 627 5991
Mr Leon Litter (CITES permits and Law Enforcement) Tel 011 355 1459 or 082 373 7712

Northern Province
Mr Johan Kruger Northern Province's Chief Directorate of the Environment's rep on the RMG.

Mpumalanga
Mr Johan Eksteen, Mpumalanga Parks Board representative on the RMG

Northern Cape
Mr Julius Koen, Northern Cape representative on the RMG

Private Sector
Dr Kobus du Toit, Acting Chairman of AROA
Mr Daan Buijs - Undertaken four out of the five rhinos status surveys on private land.

8.2 Documentation

For national plans and strategies, see Annexes 1.1, 1.2, 1.3, 1.4 and 1.5. For a draft SANP strategy, see Annexes 1.4. For contact details, see Annexes 1.5 and 1.6

8.3 Sources of Digital Information

Neil Langley, Biodiversity Data Manager, KZNW 845 1449
Rose Hamilton, Biodiversity Data Manager, KZNW 033 845 1454
Judith Kruger, Database Analyst, Scientific Services, Kruger NP, SANP 013 7354309 082 921 6981
Ray Shaller, North West Parks c/o Pilanesberg N.P. Further contact details are provided in Annex 1.5 and Annex 1.6, if not given below.

9 TRADE AND IMPORT/EXPORT OF LIVE RHINOS

9.1 CITES Management Authority

The designated National CITES Management Authority is the Department of Environmental Affairs and Tourism (DEAT). However, DEAT does not issue permits but according to KZNW's Sharon Hughes rather refers these to six other management authorities that currently are allowed to issue permits. These are: 1) Western Cape Nature Conservation – Handles permits for Western Cape and Eastern Cape 021-4833 539; 2) KwaZulu-Natal Wildlife – Handles permits for KZN 033 845 1324; 3) Free State department of Environmental Affairs and Tourism - Handles permits for Free State 051 447 0407; 4) Gauteng Directorate of Nature Conservation – Handles permits for Gauteng, North West, Northern and Mpumalanga provinces 011 355 1225; 5) Northern Cape Nature Conservation Service – Handles permits for Northern-Cape province 035 8322 143 ; and 6) Sea Fisheries – does not handle any rhino permit applications. In due course all provincial agencies are likely to issue their own permits. There is no single Scientific Authority and instead scientists working for the various nature conservation authorities throughout the country fulfil this role.

9.2 Veterinary Controls

State Veterinarians working for the Department of Agriculture are responsible for issuing export Veterinary Clearance Certificates, should these be required by the importing country. Issuing of these certificates is not required in South Africa. Tuberculosis is a possible threat to future movement of rhinos and research is currently underway to develop a Tb test for rhinos.

9.3 Past Imports and Exports

A total of 206 white and 51 black rhinos have been exported from South Africa between 1994-1999, while 2 white and 18 black rhinos have been imported. Annex 1.11 contains a list of white and black rhinos exported and imported over this period.

10 HORN STOCKS

10.1 Control, Storage and Identification

Details of horn tracking and auditing in KZNW have been provided as a confidential annex to this report. The Board of KZNW has just made horn stockpiles an auditable item. Horns in KZNW are now all being identichipped in the field and their movement from the field to final storage is documented in detail. Independent auditors have been asked to assess their horn tracking system. Once at head office horns are held in a temporary vault before being boxed and taken to final storage at a secret location.

In Kruger Park each section ranger has a walk in safe, which is used for temporary storage before horns are transported to the main vault. A specific drill exists for handling horn and ivory in the park and the bookwork for horns is in triplicate with copies sent to all regional rangers. There is also an internal park audit of horn and ivory stocks.

In the field in a number of parks, microchip transponders are often implanted in horns of animals immobilised for any reason. As part of the SA national plan a number of agencies have standardised on the make of transponder. In Mpumalanga one illegal horn that had been recovered was directly linked to a poaching incident by linking transponders found in the recovered horn and shoulder of the poached rhino.

10.2 Involvement in AfRSG rhino horn fingerprinting project

Many conservation agencies have participated and some private reserves. There is strong support for continuing with developing the analytical methods and many indicated a willingness to supply additional samples as required. There is a need for increase coverage of private rhino populations.

ZIMBABWE (Task 1.2 – 1.5)

Review by Raoul du Toit (WWF SARPO) (October-November 2000)

1 MECHANISMS FOR PLANNING AND COORDINATING NATIONAL RHINO CONSERVATION EFFORTS

1.1 Rhino Management Authority

Regulatory and enforcement authority for wildlife conservation is vested primarily in the Department of National Parks and Wildlife Management (DNPWLM), within the Ministry of Environment and Tourism (MET). A Parks and Wildlife Board is appointed by the Minister, MET, but its functions are purely advisory. Zimbabwe is subdivided into eight provinces with Provincial Governors. Although government agencies such as DNPWLM have provincial offices, they remain entirely under central government administration rather than coming under provincial government administration. Therefore the primary point of contact within the Zimbabwe Government insofar as rhino conservation is concerned is the Director, DNPWLM, P.O. Box CY140, Causeway (Head Office), Botanical Gardens, Sandringham Drive, Harare; telephone 263-4-720626 or707624; telefax 263-4-726089).

1.2 National Rhino Strategy

Zimbabwe's rhino conservation policy is outlined in a concise (8 page) document entitled "Zimbabwe Rhino Policy and Action Plan", which was approved by the Minister, MET, in May 1997 (a copy of the policy is found in Annex 2.1). The elements of this policy statement were developed at an IUCN-facilitated workshop of stakeholders (DNPWLM officials, private rhino custodians, NGO representatives and invited external experts). The full proceedings of this workshop, which was held in December 1996, are published in a DNPWLM document entitled "Zimbabwe Rhino Management Plan Framework" (April 1997). The stated goal and objectives of the national rhino policy/strategy are as follows.

Management goal: to achieve rapid increases in Zimbabwe's black and white rhino populations to levels of at least 2 000 individuals of each species through metapopulation management in suitable habitats throughout the country.

Objectives:

- establish a mechanism for coordinated and pro-active management and protection of black and white rhinos;
- secure and protect existing and new populations of rhinos throughout the country;
- ensure effective biological management of existing and new populations so as to achieve growth rates of at least 5% per year;
- establish and maintain effective monitoring and evaluation programmes for rhino populations;
- develop economic and social sustainability of Zimbabwe's rhino management programme;
- ensure immediate and effective implementation, management and monitoring of the national rhino management plan.

Although clearly articulated and duly approved by the Minister, MET, the policy statements have not been followed-up by concerted action by DNPWLM. Thus the national rhino policy can be described as lacking implementation rather than being outdated. A national rhino stakeholder's workshop was held on 12-13 October 2000, which re-affirmed the national rhino conservation strategy and identified tasks and deadlines for implementation.

1.3 Action Planning

One of the six objectives of the overall rhino policy is to ensure the immediate and effective implementation, management and monitoring of the national rhino management plan, through the development of a project planning matrix. Systematic planning has not, however, been followed through since 1995. The limited rhino management planning that has taken place has been largely in-house within DNPWLM, in reaction to immediate pressures. During the current year, administrative changes within DNPWLM have created a more conducive situation for such planning to take place with appropriate stakeholder involvement, as was demonstrated by the stakeholders meeting in October 2000. It was resolved at this meeting to quickly establish the national and provincial rhino conservation committees that are needed for action planning and stakeholder coordination. (Note: the

document entitled “Zimbabwe Rhino Management Plan Framework”, referred to in 1.2, has a confusing title and is not in fact an action plan or even the framework for an action plan).

1.4 Coordination Mechanisms

During the height of Zimbabwe’s rhino poaching crisis (1992-1995) the rhino conservation response was coordinated by a Rhino Operations Committee (also called the Rhino Project Steering Committee) which involved senior DNPWLM staff members as well as representatives of a couple of NGOs that had major rhino projects underway. The private rhino custodians were involved in rhino conservation plans through their participation in a Rhino Custodians Committee. Regular meetings of these committees ceased during 1996. Replacement committees, as specified in the 1997 Rhino Policy and Management Plan to operate at provincial as well as national levels, are only now being established as an outcome of the stakeholders’ meeting in October 2000. The private sector and NGOs are to be represented on a new rhino subcommittee of the Zimbabwe Wildlife and Tourism Advisory Council, and the meetings of this new committee will also be attended by the DNPWLM National Rhino Co-ordinator. This will serve as a national rhino committee; the composition and functions of the provincial committees are not yet clear.

1.5 Focal Point

The National Rhino Co-ordinator within DNPWLM is Ms Florence Msipa, an Ecologist within Research Branch at DNPWLM Head Office. She is the focal point for the SADC rhino programme as well as for AfRSG interaction. DNPWLM joined the Southern African Rhino Management Group (RMG) in 1996, but only the latest RMG meeting (October 2000) has been attended.

2 EXISTING MECHANISMS FOR COLLABORATION WITH OTHER RANGE STATES
(Excluding SADC Rhino Programme)

2.1 Co-ordination with other range states

There are no existing arrangements other than via the SADC rhino programme. Zimbabwe is not a signatory to the Lusaka Agreement.

2.2 Existing commitments with other SADC range states

Transfers of Zimbabwean rhinos within the region are detailed in Section 9.3. No other formal intra-SADC bilateral arrangements were developed over the past decade. Although anti-poaching coordination with Zambia was established to a limited extent during the early 1990s (notably between DNPWLM and the Zambian Anti-Corruption Commission), this tended to follow *ad hoc* arrangements rather than being based upon an established protocol, and Zimbabwe was always wary of leakages of security information. Ongoing contacts between DNPWLM and Zambian counterparts are maintained whenever either side feels that there is need for some cross-border issue to be discussed.

3 RHINO POPULATION STATUS

3.1 Summary Statistics on rhino numbers, distribution and trends

Trend in brackets indicates the inherent trend for that area excluding rhinos that have been translocated in (e.g. Up +) or out (e.g. Up -, Stable -). S = state land; PC = private custodian; P = privately owned. Poss. = additional possible rhinos (not included in total). RP = Recreational Park; IPZ = Intensive Protection Zone; FA = Forest Area; NP = National Park.

BLACK RHINOS

Area	Type	Size	Definite	Probable	Poss.	Total	Trend
Sinamatella IPZ	S	1 300 km^2	60	15	5	75	Up
Matusadona IPZ	S	500 km^2	30	10	5	40	(Up +)
Matobo IPZ	S	105 km^2	13			13	Stable
Chipinge IPZ	S	261 km^2	14			14	Up
Bubiana Conservancy	PC	1 250 km^2	75	5	2	80	Up
Save Valley Conservancy	PC	3 400 km^2	65	2	1	67	Up
Midlands - Great Dyke	PC	500 km^2	45	3	2	48	Up
Malilangwe	P	400 km^2	30			30	(Up +)
Gourlay's Block	PC	240 km^2	15	7	2	22	Up
Chiredzi River	PC	760 km^2	17			17	Up
Iwaba	PC	98 km^2	12			12	Down
Imire Game Park	PC	15 km^2	9			9	(Up -)
Chipangali Orphanage	PC	Paddocks	7			7	Stable
Total			392	42	17	434	Up

WHITE RHINOS

Area	Type	Size	Definite	Probable	Poss.	Total	Trend
Matobo IPZ + Hazelside	S	200+km^2	40	5	5	45	(Stable-)
Lake Chivero RP	S	61 km^2	20		1	20	(Up -)
Lake Mutirikwe RP	S	169 km^2	23			23	Up
Nyamaneche	S	9 ?km^2	8			8	Stable
Matabeleland N. FA	S	500 km^2		5		5	?
Hwange NP	S	5000+ km^2	15	3	2	18	(Stable+)
Malilangwe	P	400 km^2	38		1	38	Up
Iwaba	P	98 km^2	20		2	20	Stable
Save Valley	P	3 400 km^2	7			7	Up
Sipuma	P	20 km^2	3			3	Stable
Midlands Conservancy	P	200 km^2	2			2	Stable
Cecil Kop	PC	15 km^2	3			3	(Stable+)
Samanyanga	P	300 km^2	14			14	(Stable+)
El Dorado	P	Small	2			2	Stable
Total			195	13	11	208	Up

3.2 Population monitoring and reporting

The main approaches are:

i) Individual recognition. Identity and life history files are maintained for individual black and white rhinos comprising several large populations on private land, notably Malilangwe, Save Valley, Bubiana and Chiredzi River. Monitoring has, however, been disrupted by squatter invasions of ranches during 2000, which have precluded effective operations by ranch scouts in some areas, so that the records are not being updated for all rhinos.

ii) Semi-intensive monitoring. Less rigorous monitoring, still based to some extent on individual recognition but with less systematic record-keeping, is undertaken in the smaller DNPWLM areas (Chipinge, Matobo, Nyamaneche) and private areas such as Gourlay's Block.

iii) Radio-collaring. For the two largest populations in National Parks (Sinamatella IPZ and Matusadona IPZ) radio-collaring has been used as an aid to monitoring, particularly of rhinos that move over large ranges or whose home ranges are peripheral to the main population. The issue of ongoing radio-collaring has become contentious following allegations by the Sinamatella-based NGO *Rhinowatch* that the collaring is ineffective and creates veterinary risks. DNPWLM is reviewing the issue. No rhinos on private land are collared at present, although some have been in the past.

iv) Spoor recording. As an alternative to radio-collaring, *Rhinowatch* have promoted a monitoring system based on photography and computer analysis of rhino spoor. This system has been developed at Sinamatella by *Rhinowatch* but is not readily applicable as a monitoring approach in other areas.

WWF coordinates rhino monitoring for the populations in Bubiana, Chiredzi River and Save Valley Conservancies, and also liases closely with Malilangwe Conservation Trust. For these populations, records for each rhino have been collated every six months (until the current breakdown in the system due to the ranch invasions) and submitted to DNPWLM. For other private land populations, the National Rhino Co-ordinator attempts to obtain similar six-monthly returns of basic information (i.e. confirmation of each rhino being present, any breeding, illness or injuries, and other significant events). However, the quantity and quality of this information has become very variable, partly because the co-ordination mechanisms (see 1.4) were weak until recently. The monitoring in DNPWLM IPZs is also variable, being very opportunistic rather than being directed towards regular "head counts".

3.3 Requirements for surveys and monitoring

At present, there is no regular RMG-type population status reporting and comparative review of breeding performance within the various rhino populations. DNPWLM agreed that a Zimbabwean priority for technical assistance from the SADC rhino programme is the development of a computerized database approach for rhino monitoring, which WWF-SARPO has been working on. There is currently no systematic approach to monitoring and reporting on poaching incidents or threats; the recent revival of a national structure for co-ordination of stakeholders will be an impetus to the regular review of such information.

Ear-notching of rhinos is now accepted by DNPWLM as a requirement for the continuance of monitoring systems on private land. However, there is a considerable back-log of such work owing to past inertia in approving the ear-notching operations, compounded by the ranch invasions during 2000 which have stalled the operations that were finally approved for Lowveld conservancies with funding available from WWF and helicopter support from the Malilangwe Trust. The commencement of ear-notching is urgent in order to avoid the identities of "clean" subadults from becoming increasingly confused. For areas where rhinos are not monitored on an individual basis, ear-notching operations (or dehorning or radio-collaring operations) have proven to be the best way of undertaking a periodic "audit" of the animals. The implementation of the "RHINO" mark-recapture technique of population estimation needs consideration in areas where monitoring is faltering but where large proportions of the rhinos are still ear-notched. However, despite the need for these measures, the information on rhino population status in each area remains adequate for most aspects of metapopulation management and it therefore cannot be said that the implementation of the national rhino strategy has to await more demographic information.

4 MANPOWER AND OTHER RESOURCES FOR RHINO CONSERVATION

4.1 Anti-poaching resources

DNPWLM wishes to maintain keep manpower levels for specific IPZs confidential. However, an indicative situation for one large IPZ is as follows:

Area = 2,000 km^2 (core area is 1,400 km^2). Total effective scouts (excluding those on time-off or sick leave) = 30, of which the number deployed on patrol on most days = 18 to 20 (1 per 100 km^2). Four-wheel drive vehicles = 4 (1 per 500 km^2). Truck = 1. Tractors = 2

Salary levels are:

Scout = Z$4,500 to Z$5,000 (US$88 to US$98) per month
Ranger = Z$15,000 to Z$ 17,000 (US$294 to US$333) per month
Warden (in charge of IPZ) = Z$23,000 (US$451) per month.

In additional, patrol allowances are paid at a rate of Z$58 (US$1.14) per day, which is proving to be insufficient to maintain scout motivation for patrolling.

The anti-poaching allocations on private land are very variable. Lowveld conservancies have required members to maintain manpower densities of 1 scout per 25 km^2. It is difficult to separate rhino protection costs from the general costs incurred by landowners in running their ranching enterprises. A WWF review in 1998 indicated these incremental costs of rhino conservation (i.e. over and above general ranch management costs) to range from US$31 to US$57 per km^2.

4.2 Expertise available for specialised aspects of rhino management

Tracking expertise is adequate for rhino management operations within the scout forces on private land as well as in IPZs, and some trackers have had many years of relevant experience not only in locating rhinos but also in directing aircraft onto rhino positions, loading rhinos into crates, etc.

Veterinary expertise for rhino immobilizations and animal health requirements is provided by two government veterinary officers within the Wildlife Unit of the Department of Veterinary Services (WU-DVS). These inputs are dependent upon cost recovery since the WU-DVS is not funded from central government other than for salaries and basic office running costs and therefore functions through a revolving fund, with clients (including DNPWLM) paying for drugs, other consumables, mileage, etc. DNPWLM previously had its own veterinary unit (funded by the European Community) but this was dissolved in 1996. In addition to qualified veterinarians, a small number of non-veterinarians are licensed to use narcotic and other dangerous drugs for wildlife capture, and of these people who hold Dangerous Drugs Licenses about seven have experience in rhino capture and are able to play a role (e.g. in emergency situations) when the WU-DVS veterinarians are not available. Overall, Zimbabwe has adequate expertise for rhino captures, translocations, etc.

A couple of ecologists within DNPWLM are accumulating experience relevant to rhino demography, habitat assessments, etc. External expertise exists within the Harare-based SADC Rhino Conservation Programme, and there are also three or four ecologists at the University of Zimbabwe and in private consultancy practices who could provide relevant expertise.

4.3 Specialised equipment available for rhino management

During the rhino poaching crisis of 1997-1993, DNPWLM was donated several vehicles that were specially equipped for rhino capture/translocation. However, over the years these vehicles have not been used exclusively for rhino operations and have suffered considerable wear and tear. DNPWLM's ability to provide a vehicle for loading and moving rhinos in the field is therefore very limited, being primarily dependent upon one unreliable Mercedes Unimog that is based in Hwange National Park. WWF maintains a four-wheel drive Mercedes, equipped for loading rhinos, but this was donated (by the Beit Trust) specifically for WWF's activities in the Lowveld conservancies and is therefore not available for more general usage. A variety of rhino translocation crates could be put into service by DNPWLM and the Lowveld conservancies. A private game capture company has a loose agreement with the WU-DVS and the Zambezi Society to make a four-wheel drive truck with crane and crates available for rhino operations on a cost-recovery basis, together with a Hughes 300 helicopter at US$400/hour.

WWF maintains a Husky A-1 spotter aircraft that is used for rhino operations in the Lowveld but, being subject to the donation conditions of the Beit Trust, this is not generally available for operations elsewhere. DNPWLM's fleet of aircraft has become virtually unserviceable due to disputes with donors and maintenance problems, to the extent that the department cannot provide the support of a spotter aeroplane in IPZs. The Zambezi Society can sometimes meet this need in Matusadona IPZ by making its Piper Supercub available, but operations in other IPZs fall outside the Zambezi Society's geographical scope. DNPWLM does have a Bell Jetranger 206 helicopter (donated in exchange for rhinos exported to zoos), but this is proving to be too expensive to operate and may have to be substituted for with a smaller model (e.g. Hughes 300). DNPWLM did have a Robinson R22 helicopter

(paid for by USAID) but this was destroyed in a crash earlier this year, which also resulted in the death of the DNPWLM officer who had most experience in rhino operations.

The Malilangwe Trust has a Bell Jetranger 206 helicopter which is normally based in South Africa but which is available, through formal agreement with WWF, for use in Lowveld conservancies for up to 50 hours per year, without charge.

5 PARTICIPATION OF NON-STATE AGENCIES IN RHINO CONSERVATION

5.1 Community Involvement

There are no rhino populations in Communal Lands. Although significant populations did exist in the Sebungwe region and in Dande CL in the late 1980s, these were wiped out through poaching. A project to develop a community stakeholding in white rhinos in Save Valley Conservancy has received funding from WWF (sufficient for the purchase of a couple of rhinos) but has been put on hold because of the serious poaching that has been associated with recent ranch invasions by squatters. The concept is that these rhinos will be regarded as the assets of a community trust, and the conservancy (or other buyers) will purchase all progeny at the prevailing market price, generating income for the trust to fund community development projects and thereby providing an incentive for these communities to defuse any rhino poaching threats. This project would be one facet of a larger "community wildlife endowment" which would include other commercially valuable species.

5.2 Local and International NGO Involvement

WWF-SARPO supports rhino conservation in the Lowveld (Save Valley, Chiredzi River, Bubiana and Malilangwe) through the Rhino Conservancy Project. This was initiated with Beit Trust funding, which was applied catalytically to induce the formation of conservancies that met criteria for this support (notably, the acceptance by landowners of a conservancy constitution that precludes internal game fencing and establishes a set of mutual obligations for sustainable, scientifically-based wildlife management, in extensive areas of suitable habitat). Apart from the salary and overhead costs of the Project Executant (R. du Toit), WWF's annual funding on this project amounts to some US$25,000. This includes community outreach activities, which are presently focussed on Save Valley. WWF-US is in the process of allocating a similar amount to the rhino-related activities of the Wildlife Unit of the Department of Veterinary Services (WU-DVS), to support ear-notching and other veterinary interventions for black rhinos throughout Zimbabwe, during 2000-2001.

The Malilangwe Trust runs its own rhino conservation programme on its property near Chiredzi and, in addition, has formed a strategic alliance with WWF-SARPO to assist rhino management operations on a broader scale in the Lowveld through the provision of helicopter support. Since such operations have not been initiated this year due to security problems associated with the land invasions, the helicopter has not been used except on Malilangwe itself and it is therefore not yet possible to assign a monetary value to this support.

Save the Rhino International has recently allocated US$7,000 to the WU-DVS to support veterinary interventions for ear-notching, radio-collaring, translocations, etc. (including helicopter hire) in IPZs.

The International Rhino Foundation has pledged US$25,000 to the WU-DVS for the same purposes. Thus the WU-DVS is adequately funded for its rhino work over the next year at least.

The Marwell Zimbabwe Trust (MZT) has been supporting the captive rhino breeding programme at Chipangali and is in the process of establishing its own Dambari Field Station for intensive management of rhinos, adjacent to Chipangali. MZT are also supporting nutritional research relevant to the release into the wild, in Matusadona NP, of hand-reared black rhinos.

The Zambezi Society has been the most active of the local Zimbabwean NGOs, as far as rhino conservation is concerned. Since 1993 the society's main emphasis has been on the provision of support for Matusadona IPZ, being the only remaining rhino population in the Zambezi Valley. This support has been directed towards the establishment and maintenance of a centre for the release of hand-reared rhino calves, in collaboration with the Matusadona Tour Operators Association; boma construction and maintenance, the provision of fuel and other essential needs for the IPZ; funding of veterinary work (by DVS-WU); and the provision of a spotter aircraft for ear-notching operations. Over the past year, this support has amounted to about US$8,000.

Other NGOs funding rhino conservation in Zimbabwe include the Sebakwe Black Rhino Trust (involved in private land projects in the Midlands), *Rhinowatch* (funding their own research activities in Sinamatella IPZ), and Save Foundation of Australia.

5.3 Private Sector Involvement

Some 300 black rhinos (70% of the national total) are now managed on private land in Zimbabwe. Apart from 28 that were imported from South Africa by the Malilangwe Conservation Trust in 1998, these rhinos are the outcome of the translocation of about 150 rhinos that were threatened by poaching in state areas. A decade ago the private sector held only 10% of the national population while about 1,000 black rhinos were on state land, but the latter population has now fallen, due to poaching, to about 140. Thus the private sector has played an extremely positive role in protecting rhinos on behalf of the nation, under a custodianship arrangement, so that DNPWLM could concentrate its own manpower and other anti-poaching resources in a few IPZs where the poaching attrition could finally be stemmed. The motivation for private custodians has been a combination of interest in contributing to the conservation of the species and interest in enhancing ecotourism opportunities on their properties.

The rhino custodianship programme was a catalyst to the formation of large conservancies. WWF and the Beit Trust made funding for private sector rhino projects conditional upon the amalgamation of ranches into areas large enough to receive at least 25 founders into each area with room for expansion to a population size of over 100. The establishment of joint wildlife management and anti-poaching operations and the removal of internal game fencing have created conditions that have been conducive not only to the rapid breeding of rhinos but also to the general restoration of biodiversity on ranches that had been degraded through cattle ranching.

Initially the Midlands area was seen as the most suitable for moving rhinos to under the custodianship scheme, because it is distant from the cross-border poaching risk. However, as rhino management experience was gained it became clear that the dystrophic miombo habitats of the Midlands have a low carrying capacity for black rhinos. This gave rise to a high mortality rate amongst translocated rhinos. A controversial destocking exercise was undertaken by DNPWLM in 1993 to alleviate this problem.

The most difficult aspect of the custodianship scheme has been the political tension associated with the racial imbalance in land ownership in Zimbabwe. The scheme has been jeopardized by the recent politically-incited invasions of white-owned farms. Where rhinos have not bred well on private land because of inferior habitats, poaching or other problems, landowners have sometimes been resistant to DNPWLM's operations to move these animals to more suitable areas. DNPWLM has the legal power to override landowners' objections and to implement decisive action in the interests of the rhinos. Nonetheless, the friction that has arisen (particularly in the Midlands) has sometimes become so serious as to create a political logjam for rhino metapopulation management.

6 PROPOSED PROJECTS

Database project. In Semester 2 of the SADC Rhino Conservation Programme, WWF developed an Access-based database system that facilitates detailed record-keeping for rhinos at an individual, population (area) and national level. During Semester 3 it would be desirable to implement this system within DNPWLM and within the major conservancies, while concurrently refining it in accordance with the snags that will inevitably arise during the implementation phase.

Radio-collaring project. Since concerns have arisen over the cost-effectiveness and veterinary risks of radio-collaring, it would be desirable to develop new designs for "rhino friendly" but durable collars and to test these in situations where the rhinos can be closely monitored (notably at Imire or in the Tashinga project at Matusadona IPZ, where the rhinos are held under semi-captive conditions).

Transponder project. Transponder technology may well offer a cost-effective solution to rhino monitoring as new miniaturised implantable devices, with electromechanical power sources, are developed. There has been recent progress in this technology ("Digital Angel" system) in the USA. Ongoing effort should be made within the SADC Rhino Conservation Programme to keep current with these developments and to test their applicability for our rhino needs as soon as possible.

Rhino census project. Since some populations are no longer monitored through regular recognition of every individual, DNPWLM seeks technical support in estimating population sizes, for which the RHINO mark-recapture technique is likely to be highly appropriate. DNPWLM staff members therefore require training in this statistical technique and some training in rhino identification would also be desirable for the scouts who are to collect the relevant sighting information.

7 NATIONAL LEGISLATION AND POLICIES

The pertinent legislation is embodied in the Parks and Wildlife Act (Chapter 20:14). Both species of rhinos are classified as "specially protected species" (Annex 2.2)

7.1 Penalties

The Act specifies mandatory penalties for a) the unlawful killing or hunting of a rhino (hunting being defined as injuring, shooting at, wilfully molesting, capturing, etc., or even the intent to take any such actions); b) unlawful possession of or trading in rhino horn. These mandatory sentences are: for a first conviction, imprisonment for not less than 5 years and not more than 15 years; for a second conviction, imprisonment for not less than 7 years and not more than 15 years. Fines are applicable instead of imprisonment or in addition to imprisonment if special circumstances pertain, these fines to not exceed Z$15,000. This figure has not been adjusted to follow the ongoing devaluation of the Zimbabwean currency (it would be equivalent to US$283 in November 2000 whereas it was equivalent to US$5,700 when revised in 1990).

7.2 Ownership of Rhinos

In terms of section 45 of the Act no person may hunt, keep, have in his possession, sell or otherwise dispose of any live specially protected animal, save with a permit issued in terms of section 46. While the allocation of a permit is necessary in order to keep a specially protected species, this does not in itself confer ownership. But rhinos and other specially protected species can be owned by private individuals who are appropriately licensed, just as a firearm can be owned by someone provided that person has a firearms licence. Apart from the necessary permit, a landowner who wants to claim ownership of a rhino (for instance, one that has been imported privately from South Africa) has to show that he has the animal under some degree of control; if it strays off his land, he cannot claim that he still owns it. However, his neighbour would not have a permit to keep the rhino so they should be no legal problem in returning the rhino. Thus the Zimbabwean legislation should, if interpreted correctly, be conducive to private investment in rhinos and to the commercial sale of these wildlife assets. However, black rhinos on private land (apart from those on Malilangwe, which were imported privately) were allocated under Zimbabwe's rhino custodianship scheme according to which there is no expectation that the landowner would claim ownership of the rhinos or their progeny. Some landowners who manage rhinos have been issued with permits that outline the custodianship conditions while other landowners have not. Thus there is an urgent need to tidy up the permit arrangements. At the national rhino stakeholders meeting in October 2000, it was agreed that the private sector should voice proposals on the conditions that should be stated on permits, with the landowners' privileges being varied according to whether the rhinos were privately imported and/or purchased, or allocated on a custodianship arrangement.

7.3 Hunting and live sales of rhinos

In the past, permits have been issued for safari hunting of white rhinos (on Iwaba) and white rhinos have also been traded within the private sector. As explained above, the basic Zimbabwean legislation allows for a permitting system with conditions and privileges being varied to suit circumstances including those pertaining to live sales and safari hunting. However, DNPWLM policy since 1995 has been to restrict the privileges of private landowners with regard to their commercial gain from specially protected species. This attitude may well change in response to the stakeholders' insistence that the permitting system is reviewed to give greater incentives for private sector investment in rhino conservation.

In terms of section 47, the trophy (i.e. rhino horns) of any specially protected animal killed or found dead is deemed to be a State trophy. Individuals have, in the past, been issued with permits to keep horns from rhinos that they have owned which have died or which are family heirlooms. The current policy regarding the issuing of permits to keep horns has not been tested over recent years.

8 DATA SOURCES

Most information has been derived from the personal knowledge and records of R. du Toit: Project Executant, WWF Rhino Conservancy Project, 10 Lanark Ave, Harare.

8.1 Names, addresses and contact details of all informants/interviewees

Lovemore Mungwashu, Chief Warden, DNPWLM Headquarters, Harare.
Florence Msipa, National Rhino Co-ordinator, DNPWLM Headquarters, Harare.
Tom Milliken, TRAFFIC East and Southern Africa, 10 Lanark Ave, Harare.
Participants at national rhino stakeholders' workshop, Ambassador Hotel, Harare (12-13 October 2000).

8.2 Documentation

Zimbabwe Rhino Policy and Management Plan. Ministry of Environment and Tourism, Harare. Approved 20 May 1997 (Annex 2.1)
Zimbabwe Rhino Management Plan Framework. Recommendations from the Department of National Parks and Wildlife Management seminar held at the Boulton-Atlantica Centre, 12 December 1996.
Draft minutes of the National Rhino Stakeholders Meeting, held at the Ambassador Hotel, Harare, 12-13 October 2000.

8.3 Sources of Digital Information

Databases: Raoul du Toit, WWF SARPO, Box CY 1409, Causeway, Harare
Sarah Clegg, GIS Manager, Malilangwe Conservancy

GIS: WWF SARPO, Box CY 1409, Causeway, Harare

9 TRADE AND IMPORT/EXPORT OF LIVE RHINOS

9.1 CITES Management Authority

This is the Department of National Parks and Wildlife Management.

9.2 Veterinary Controls

An animal health protocol is drawn up by the Wildlife Unit, Department of Veterinary Services, to specify veterinary measures according to the country of export. Treatment for internal parasites and removal of external parasites are mandatory. For imports from South Africa, the major concern is tuberculosis. There is no reliable test for carriers of this disease but DVS regards rhinos as dead-end hosts and has not so far precluded imports from South Africa. Within Zimbabwe, movements of rhinos do in principle require a veterinary movement permit but this is merely a formality.

9.3 Past Imports and Exports

Imports

Species	Year	From	To	Number
White	1962	Kwazulu-Natal	Muturikwe RP	4?
White	1962	Kwazulu-Natal	Matobo NP	4?
White	1965	Kwazulu-Natal	Muturikwe RP	6
White	1966	Kwazulu-Natal	Matobo NP	8
White	1966	Kwazulu-Natal	Muturikwe RP	23
White	1966-67	Kwazulu-Natal	Hwange NP	35+
White	1967	Kwazulu-Natal	Matobo NP	1
White	1967	Kwazulu-Natal	L. Chivero RP	3
White	1967	Kwazulu-Natal	Zambezi NP	4
White	1972	Kwazulu-Natal	Ranch, Dete	4?

Species	Year	From	To	Number
White	1972	Kwazulu-Natal	Ranch, W. Nicholson	4?
White	1973	Kwazulu-Natal	Hwange Safari Lodge	9+
White	1974	Kwazulu-Natal	Ranch, Dete	8
White	1974	Kwazulu-Natal	Iwaba	8
White	1974	Kwazulu-Natal	Ranches, Chiredzi	9
White	1974	Kwazulu-Natal	Ranch, W. Nicholson	10?
White	1996	South Africa	Malilangwe	3
White	1997	Kwazulu-Natal	Malilangwe	12
White	1998	South Africa	Ranch, Bubye	14
Black	1998	Kwazulu-Natal	Malilangwe	28

Exports

Species	Year	From	To	Number
Black	1964	Sebungwe	Zoo	1
Black	1965	Sebungwe	Zoo	1
Black	1967	Matobo NP	Pretoria Zoo	1
Black	1972	Kariba	Kruger NP	12
Black	1982	Sebungwe	Los Angeles Zoo	2
White	1983	Ranch, W. Nicholson	Algeria zoo?	3?
Black	1984/5	Dande CL	N. Korea, Jugoslavia	6
White	1984	?	N. Korea	2?
Black	1987	Zambezi Valley	Swaziland	6
Black	1989	Zambezi Valley	USA zoos	10
Black	1989	Zambezi Valley	Frankfurt Zoo	2
Black	1992	Chete SA	USA zoos	7
Black	1992	Chete SA	Dubbo Zoo	6

The arrangements pertaining to early imports and exports are unclear. Points of relevance to recent rhino management policy are:

- imports by the private sector have all been through private purchase;
- exports of black rhinos to USA and Australia in 1992 were reciprocated through the provision of a Bell JetRanger helicopter and the payment of the aircraft's operating costs for some years, plus all handling and shipping costs, by the International Rhino Foundation;
- DNPWLM is currently reviewing the arrangements that pertained to exports to overseas zoos following concern that progeny of black rhinos exported to Frankfurt Zoo are being returned to South Africa and not to Zimbabwe.

10 HORN STOCKS

10.1 Control, Storage and Identification

Control of horn stocks is undertaken effectively in Zimbabwe, in accordance with guidance from TRAFFIC. All horns are marked with indelible felt-tip pens, weighed on a digital scale, recorded in a computerized database, and stored in a strong room at DNPWLM headquarters. The database was adapted from the TRAFFIC ivory database system. Field registers are also maintained in field stations which collect horns, such horns being kept only temporarily in these stations before being forwarded to the headquarter strong room. Shavings of horn that were derived from chainsaw dehorning in the early 1990s are also stored in labelled bags in the strong room.

10.2 Involvement in AfRSG rhino horn fingerprinting project

Zimbabwe did not cooperate in the first phase of the AfRSG horn fingerprinting project by providing horn samples from areas that currently contain rhinos. However, at the national rhino stakeholders meeting in October 2000 it was agreed that Zimbabwe should provide samples. The matter can now be pursued between AfRSG and the DNPWLM National Rhino Co-ordinator.

BOTSWANA (Task 1.2 – 1.6)

Review by Rob Brett (Programme Co-ordinator) (Country Visit: 11-13 September, 2000. Also on DWNP staff 1999-2000)

1 MECHANISMS FOR PLANNING AND COORDINATING NATIONAL RHINO CONSERVATION EFFORTS

1.1 Rhino Management Authority

The national management authority for rhinos in Botswana is the Department of Wildlife and National Parks (DWNP). The DWNP falls under the Ministry of Commerce and Industry (MCI).

1.2 National Rhino Strategy

There is a national rhino strategy, which was first drafted in July 1991 but has still not been finalised or received formal approval from the DWNP Director, or Minister of Commerce and Industry. The latest version of the plan (DWNP 1999a) was circulated in July 1999, and includes four objectives:

To adequately protect and/or remove from harm's way all wild, free ranging rhino in the country.
To hold, care for and captive breed rhino in secure sanctuaries within Botswana's borders utilizing supplemental breeding stock acquired from outside the country when deemed necessary.
To reintroduce rhino in Botswana to their wild free ranging state when conditions allow.
To work with other range states and the world community to remove the threats which have brought the rhino to the brink of extinction.

Although the black rhino is believed to be extinct in Botswana, the draft strategy '*is applicable to the management of both black and white rhinos'*, and is in need of updating, finalisation and approval.

1.3 Action Planning

The draft Botswana rhino conservation strategy does specify priority areas for rhino conservation in Botswana (e.g. Khama RS, Mokolodi NR, Gaborone GR, Francistown GR), and there are recommendations for holding and movement of specified numbers of white rhinos (e.g. in Gaborone GR). However, there is no timing specified to the recommended actions, and the current document should be finalised as a strategy. Once this has been approved, medium-term (5-year) and short-term (yearly) action plans need to be developed.

1.4 Coordination Mechanisms

The draft strategy (DWNP 1999a) specified the structure and composition of a national rhino committee, the Rhino Management Group, which '*will be responsible for the planning and implementation of comprehensive breeding strategies involving all sites'*. The RMG includes representatives of DWNP senior staff and the private land rhino sanctuaries, and the Botswana Defence Force (BDF, due to its interest in conservation and involvement with anti-poaching and security of rhino). The RMG has never met, and one of the consequences has been a lack of direction, co-ordination and facilitation of rhino conservation activities in Botswana in the five years.

1.5 Focal Point

There has been no formal appointment of a rhino co-ordinator for Botswana or focal point for the SADC Rhino Programme. Isaac Theophilus (ag Deputy Director, DWNP) represented Botswana at the SADC Range States meeting in March 2000. Moremi Tjibae (Senior Wildlife Officer, DWNP) represented Botswana at the last AfRSG meeting (Tanzania, June 2000: Tjibae 2000). Cyril Taolo (Senior Wildlife Biologist, DWNP) represented Botswana at the previous AfRSG meeting (Namibia, April 1998).

1.6 Potential for facilitation by SADC rhino programme

The SADC Rhino Programme is in a very good position to facilitate the updating of the current draft rhino strategy, the development of a mid-term action plan (for which the programme could provide appropriate expertise) and several projects involving the use of additional expertise from the SADC region, and potentially, planning for the re-introduction of black rhinos to Botswana.

2 EXISTING MECHANISMS FOR COLLABORATION WITH OTHER RANGE STATES
(Excluding SADC Rhino Programme)

2.1 Co-ordination with other range states

Botswana has had several fruitful links with conservation agencies in South Africa, particularly with regard to provision of southern white rhinos for re-introduction to areas of former range in the country. This has continued in spite of the virtual extinction of the first 'wave' of white rhinos re-introduced between the last 1960's and 1980. These rhinos (94 in total) were all provided by the Natal Parks Board. The assistance of the Natal Parks Board continued during the phase of capture and recovery of 8 remnant animals in Chobe NP and Moremi GR in 1994-96, of which 6 survived after translocation to the Khama Rhino Sanctuary near Serowe. The DWNP presently has formal ties with the North West Parks and Tourism Board in South Africa. The co-ordination arrangements were originally formalized through a high-level bi-lateral agreement at Ministerial level. The initial dealings involved a donation of 5 white rhino to Khama Rhino Sanctuary (June 1995), followed by a further three animals (August 1999). One rhino was brought in exchange for a number of wild dogs provided to NWPTB, but then died.

2.2 Existing commitments with other SADC range states

At the time of independence (1990), Namibia committed to a donation of two black rhinos to Botswana, with the possibility of providing a further two animals in exchange for waterbuck. Negotiations over these transfers have continued between the Namibian MET and DWNP up to date, including a meeting held in 1998. Effecting the transfers has been complicated by (i), disease control and quarantine of water buck from Botswana to Namibia, (ii), the different black rhino subspecies and their former range in Namibia (*D.b.bicornis*) and Botswana (*D.b.minor* in northern and eastern areas of Botswana). To resolve the subspecies issue, there has already been discussion over a solution involving transfer of *D.b.bicornis* from Namibia to SANP in South Africa, and provision of *D.b.minor* from SANP to Botswana. An alternative arrangement would be the provision of *D.b.bicornis* to Botswana, followed by exchange for these with an equivalent number of *D.b.minor* from RSA (SANP). There has been formal co-operation between Botswana and Namibia over cross-border law enforcement, including regular meeting of district representatives, and representation at the Regional Security Committee. Botswana has also been represented in the Rhino and Elephant Security Group (RESG).

3 RHINO POPULATION STATUS

3.1 Summary Statistics on rhino numbers, distribution and trends

The rhino population estimates provided to the AfRSG meeting in June 2000 were as follows:

Country	Species	SSp	Park	Type	Num	Size	RCPE	Prob	SG	Total	Trend	Den
Bot	White	Css	Moremi GR	S	1	15380		3		3	?	0.000
Bot	White	Css	Gaborone GR	S	1	5	1			1	D	0.200
Bot	White	Css	Khama Rhino Sanctuary	C	1	43	15			15	U	0.349
Bot	White	Css	Mokolodi NR	P	1	30	9			9	U	0.300
Bot	White	Css	Tholo Ranch	P	1	35	3			3	?	0.086

Since the AfRSG meeting, a further two births at Khama RS (August 2000) and Mokolodi NR (July 2000) have increased the total population of white rhinos in Botswana to an estimated 33 animals, of which 30 are found in fenced areas. The population breakdown of the two sanctuary populations is as follows:

Khama RS	Male	Female	Unsexed	Total
Adult	1	6	0	7
Subadult	1	1	0	2
Calf	4	2	1	7
Total	6	9	1	16

Mokolodi NR	Male	Female	Total
Adult	2	3	5
Subadult	0	1	1
Calf	1	3	4
Total	3	7	10

Apart from the single adult male in Gaborone GR (within a1 km^2 paddock within 5 km^2 reserve), and the three probable animals remaining in Moremi GR, there are three white rhinos at Tholo ranch in Ghanzi District (2 subadult females, 1 subadult male). An adult male black rhino was translocated to Jwana Game Park (Jwaneng Mine) in August 1999, but died shortly after release. Francistown GR (12 km^2) is being developed as a future area for a small population of white rhinos, and is now ring-fenced to an adequate standard. Like Gaborone GR, the Francistown GR is primarily an educational facility. The black rhino is believed to be extinct in Botswana. Although occasional reports are received of rhinos, possibly black, straying into Botswana from Hwange NP in Zimbabwe, there have been no confirmed reports of black rhinos in Botswana since 1994.

3.2 Population monitoring and reporting

The rhino populations in Khama RS, Mokolodi NR, Gaborone GR and Tholo Ranch are monitored daily and all are individually identified. Currently populations are small enough to identify all animals, although ear-notching is already needed at Khama Rhino Sanctuary to confirm future identity of immature rhinos. Isolated reports are received of rhinos in Moremi GR, north of Nxai Pan NP and the Nata area (probably animals straying from Zimbabwe), although there is no follow-up of these reports at present.

Private sanctuaries are obliged to report to DWNP on status of rhino populations, although the timing and format for such reports are not clear. There is no formal reporting procedure. Khama RS used to provide quarterly reports to DWNP, but now do so less often, but at least annually. Mokolodi NR provide irregular reports on rhino populations status to DWNP. The most recent owner of white rhinos (R Eaton) had his property checked by district DWNP staff before permits for translocation of the rhinos were issued. Poaching information is compiled in monthly reports by M Tjibae, and all records will be entered into an incipient poaching database. Horns seized are retained by the police until court cases have been completed. The current wildlife legislation (RoB 1992: Annex 3.1) provides for a penalty specific to crimes involving rhinos, such that an '*offender is liable to a fine of Pula 100,000, and to imprisonment of 15 years*' for illegal killing of rhinos, or possession or trafficking in rhino horn.

3.3 Requirements for surveys and monitoring

Although standards of rhino monitoring in the private land rhino sanctuaries are of adequate standard for routine surveillance, these have not been realised in DWNP areas. This includes the small fence Gaborone GR, where monitoring was insufficient to detect the cause of death of three animals since March 1998. In addition, there is inadequate information about the remnant animals in or neighbouring the Moremi GR and stray animals on the Botswana-Zimbabwe border area. Present standards of rhino monitoring, surveillance and security in DWNP are a definite impediment to adequate protection of rhinos on state land in Botswana, and this will have to be addressed for the development of any larger population of rhinos, black or white, on DWNP estate in the future, particularly a free-ranging population.

4 MANPOWER AND OTHER RESOURCES FOR RHINO CONSERVATION

4.1 Anti-poaching resources

The tables below give approximate figures for scout density, operating budgets and staff salaries for the key rhino protection areas in Botswana:

Area	**Type**	**Area (km^2)**	**Scouts**	**km^2/Scout**	**Operating Budget (USD)**	**Budget (USD/km^2)**
Moremi GR	S	4900	20	245	?	?
Chobe NP	S	10624	37	287	?	?
Gaborone GR	S	5	4	1.25	?	?
Khama RS	C	43	11	3.91	50,000[NB]	1,163
Mokolodi NR	P	50	8	6.25	220,000	4,400

[NB] This does not include costs of BDF security patrols on periphery of Khama RS

Scout Salaries USD pa	Recruit		Junior		Senior	
DWNP	2450	2940	3120	3710	3739	4498
Mokolodi NR			1200	1680	2880	
Khama RS			1080		2160	

4.2 Expertise available for specialised aspects of rhino management

There is very limited availability of rhino management expertise in Botswana. DWNP has a senior veterinary officer with some experience of rhino capture based in Kasane (Dr K Alexander). A more experienced game capture veterinarian (L Patterson) is based in Gaborone. Past evaluations of rhino habitat, carrying capacity, etc of rhino sanctuaries have been performed by external consultants (Khama RS: D Grossman, Mokolodi NR: D Reynolds). There is little or no advanced expertise on rhino monitoring, rhino tracking and demographic monitoring within DWNP or the private sector areas.

4.3 Specialised equipment available for rhino management

DWNP has a new Bell 207 Jet Ranger helicopter and two Cessna 206s. DWNP also has two ageing and little used rhino capture trucks based in Gaborone (1991 models), and three rhino crates. These were not inspected during the review. Khama RS has five large holding pens (white rhino) and linked release paddocks, all maintained to adequate standard. Mokolodi NR has six half-built rhino bomas, which need poles and sliding doors to complete. They intend to use the completed pens eventually for game auctions.

5 PARTICIPATION OF NON-STATE AGENCIES IN RHINO CONSERVATION

5.1 Community Involvement

Khama RS has the potential for a high degree of community involvement. The Khama RS was set up as a community project, and the Khama Rhino Sanctuary Trust is already managed by a board of trustees composed of village headmen from the immediate area of the Khama RS. Although there stated aim of the Trust is '*to ensure full community participation as well as the capturing of benefits and opportunities generated by the project by the local community*' (KRST 1995), at present there is insufficient revenue inflow from the tourism to share directly with neighbouring communities. However, the existing and future employment opportunities offered by the sanctuary are good. Mokolodi NR has some degree of community interaction, functioning mainly as an educational establishment offering subsidised visits and courses for school children from the Gaborone area. The reserve and its education and tourist facilities employ over 70 people from adjacent villages (Mokolodi Wildlife Foundation 2000a). Gaborone GR also has high value as an low-cost educational park for the residents of Gaborone, with low entry fees and popular picnic sites.

5.2 Local and International NGO Involvement

The two main local NGOs are those managing the two main private rhino sanctuaries, the Khama Rhino Sanctuary Trust and the Mokolodi Wildlife Foundation. Each enjoys a very good relationship with the DWNP. The DWNP director sits of the MWF board. International donors/NGO's (e.g. NORAD, US Fish & Wildlife Service) have contributed to the KRST in the past, and the MWF receives extensive support from local donors.

5.3 Private Sector Involvement

There are presently three private sector participants in rhino conservation in Botswana: Khama Rhino Sanctuary Trust, the Mokolodi Wildlife Foundation and Tholo Ranch (Messrs Eaton). A fourth (Debswana: Jwana Game Park at Jwaneng Diamond Mine) briefly held one adult male white rhino, and intends to develop a population of white rhino at Jwana Game Park (and possibly at Orapa Mine) some time in the future. At present the involvement of the private sector is entirely positive, especially bearing in mind the relative lack of capacity for protection and management of viable rhino populations within DWNP-managed areas. The private sector is essentially managing Botswana's rhino population on behalf of the Government.

Although the Mokolodi NR rhinos are owned by the MWF, and some (but not all[1]) of the Khama RS rhinos are owned by the KRST, the draft rhino policy (DWNP 1999a) states: '*Notwithstanding and recognising the actual ownership of the rhino, all rhinos in Botswana should be viewed as the "national herd" and form part of a coordinated breeding and conservation program. In this context, all rhinos born within Botswana (at whatever facility) are considered to be a part of this breeding strategy and their disposition will be governed by the conditions outlined*… (in the plan)'. The only possible negative aspect of the private sector involvement is that there would appear to be less incentive for the Government to re-introduce rhinos to its wildlife estate while the private sector are managing the country's rhinos successfully on its behalf. However, given the limited capacity and long-term viability of the sanctuary rhino populations, development of large wild populations in National Parks or Reserves will be an essential component of maintaining a viable metapopulation of rhinos, white or black, in Botswana in the future.

The Khama Rhino Sanctuary is managed with reference to an approved management and development plan (KRST 1995), although the plan is now in need of updating, particularly in light of the recent acquisition of a ca. 50 km^2 ranch from the Botswana Livestock Development Corporation (BLDC) near to, but not adjoining the present Khama RS. If this land can be exchanged for an equivalent or larger area adjoining the west or southwestern side of the Khama RS, and the whole area thus more than doubled in size, it has the potential for developing a large population of white rhinos, as well as a small breeding nucleus of black rhinos. If it could be achieved, this development could also provide the basis for the re-introduction of black and white rhinos to a larger protection area for rhinos on DWNP estate (e.g. Moremi GR).

The objectives of the Mokolodi GR are less focused on rhino conservation and more on education (MWF 2000a), although the present white rhino population is in an ideal state for rapid growth up to the capacity of the reserve. This needs revised estimation, particularly given the impact of other grazers in the present reserve area. A draft management plan was produced for the Mokolodi NR in 1993 by Dan Reynolds, which included estimates of carrying capacity for rhinos and other herbivores on the basis of livestock units. Mokolodi NR does carry out annual vegetation assessments and regular game counts (MWF 1998, 1999). A new management plan for the reserve (MWF 2000b) is presently in draft form.

6 PROPOSED PROJECTS

Update and finalisation of the draft Botswana Rhino Conservation Strategy

SADC RPRC Outputs: 1
SADC RPRC Activities: 1.1, 1.2
Lead agency: DWNP
Collaborating agencies: Khama RS, Mokolodi NR, Moremi GR private sector, Private ranches
Possible Timing: Semester 3

Background and Rationale

Botswana's national rhino strategy, which was first drafted in July 1991, is still in draft form, and has not been finalised or received formal approval from the DWNP Director, or Minister of Commerce and Industry. The finalisation of the rhino strategy would be a vital first step in developing rhino conservation in Botswana towards consolidating the management of white rhinos in present conservation areas (mostly private sector), and developing viable populations of rhinos in DWNP-managed protected areas, including the potential re-introduction of black rhinos (*D.b.minor*) to the country. It would require the input of one SADC programme consultant for one week in Botswana, and include a workshop to agree on the strategy in a form which can be submitted for approval by the Minister of Commerce and Industry. Once the principles for future conservation and management of both white and black rhinos in Botswana have been agreed on, action plans can be drawn up on an annual basis for development of rhino protection areas and translocation of rhinos, etc. Facilitation of the national rhino committee (RMG), for which the workshop would in effect be its first meeting, would also be an important result.

[1] All rhinos translocated to the Khama RS by the DWNP and any offspring the females may produce remain the property of the Government of Botswana. Additional rhinos from private sources or from sources outside Botswana may be brought to the Khama RS, pending approval by DWNP on a case by case basis (DWNP/KRST 1994, in KRST 1995: see Annex 3.2)

Workplan

The plan would be revised and finalised by a SADC programme consultant during a mission which would commence with an inaugural meeting of stakeholders, which would convene regularly thereafter as the Rhino Management Group (composition already defined in the draft strategy). This meeting would confirm the outline goals and management principles for Botswana's rhino strategy that could be signed up to by all participants. Following comments received from all parties and additional input from the SADC consortium (AfRSG), a final draft would be submitted to the Director DWNP and key representatives of the private sector (Khama RS, Mokolodi NR) for signature. The strategy would then be formally approved by the Minister of Commerce and Industry.

Training of scouts/rangers in rhino monitoring/surveillance methods

SADC RPRC Activities: 4.1, 4.2, 6.1
Lead agency: DWNP
Collaborating agencies: Khama RS, Mokolodi NR, RSA wildlife authority (e.g. KZNW, NWPTB)
Possible Timing: Semester 4

Given the lack of expertise in Botswana for rhino monitoring and surveys, particularly within DWNP, this project would provide training in the form of a course held at a rhino reserve in South Africa (e.g. KZNW, NWPTB) with a high level of rhino monitoring expertise, for selected staff from DWNP, Khama RS and Mokolodi NR. This could be followed by on-the-job training in Botswana rhino reserves, and include the production of manuals for use by rhino monitoring staff in the public and private sector areas.
(NB this project could be extended to include other SADC range states, and become a regional training project).

Assessment of habitat, carrying capacity and management options for black and white rhinos in an extended Khama Rhino Sanctuary

SADC RPRC Outputs: 1, 6
SADC RPRC Activities: 1.2, 6.1
Lead agency: Khama RS
Collaborating Agency: DWNP
Possible Timing: Semester 3

Background and Rationale

Khama RS has been the most successful conservation area for rhinos in Botswana to date. Although the present santuary has sufficient area and capacity for ca. 30 white rhinos (stocking rate guidelines in the current management plan: KRST 1995), , the area could only hold a maximum of 5-6 black rhinos (at an estimated ECC density of 0.1-0.15 rhino/km^2 (KRST 1999 eECC = 10)). If the acquisition by KRST of ca. 5000 ha of land (near to, but no not adjoining the present sanctuary) can lead to an extension of the sanctuary to ca. 100 km^2, the development of a small breeding nucleus of up to 10-15 black rhinos becomes feasible. This project would make a detailed assessment of the habitat and carrying density of the present sanctuary, land acquired and possible areas for extension to ca. 100 km^2, and recommend the best options for development of the sanctuary to allow holding of populations of at least 10 black rhinos and 30 white rhinos.

Workplan

Two SADC programme consultants would visit Khama RS for one week, and undertake a systematic assessment of rhino habitat, review sanctuary management and security, and examine and recommend the most suitable options for expansion of the sanctuary to allow the development of a larger white rhino population and the development of a small breeding nucleus of black rhinos. The output would be a report for the KRST including recommendations for both the trust and DWNP.

Assessment of areas and options for development of an intensive protections zone for re-introduction of white and black rhinos to Moremi GR

SADC RPRC Outputs: 1, 3, 5
SADC RPRC Activities: 1.2, 3.1, 5.3
Lead agency: DWNP
Collaborating Agency: DWNP
Possible Timing: Semester 3

Background and Rationale

With a few remnant white rhinos in the area, suitable habitat, natural boundaries, and position away from international boundaries, the Moremi GR presents itself as the most suitable area in Botswana's protected areas for development of a protection zone for large wild populations of white and black rhinos. Private concessionaires with camps/lodges in the area (e.g. Chief's Island: Mombo area) have already expressed an interest in a partnership with DWNP over monitoring and management of rhinos re-introduced. This study would examine all options for development of a rhino protection area (IPZ, flexible fenced sanctuary, etc) in Moremi GR, and assess the opportunities and requirements for adequate protection and management (by DWNP, BDF, the private sector and local communities) of restricted or free-ranging populations of white and black rhinos. This would include participation of, and potential benefits to local communities. The biological/habitat constraints of potential sites would also be evaluated.

Workplan

A 10-day mission by 2 SADC programme consultants would be required, including a field visit to Moremi GR (Mombo area) and areas where reports of outlier white rhinos are still received. Alternative options for development of an IPZ and/or flexible sanctuary would be examined, bearing in mind past introductions, distribution and release methods for white and black rhinos, availability of suitable habitat, and security and management capacity within the DWNP, BDF and private sector and/or a combination of all three. The product would be a report for use by DWNP and partners in funding and developing protection area for rhinos in Moremi GR with the best possible chances of success within the conditions prevailing in the area.

Facilitation of the provision of a small founder population of black rhinos to Botswana

SADC RPRC Activities: 1.2
Lead agency: SADC Consortium
Collaborating Agency: DWNP (Botswana), MET (Namibia), SANP (South Africa), NWPTB (South Africa)
Possible Timing: Semester 4-5

Given the long-standing offer of two black rhinos to Botswana from Namibia, and the opportunities for provision of the appropriate subspecies (*D.b.minor*) to Botswana from South Africa (SANP, NWPTB) in exchange for Namibian *D.b.bicornis* (with more negotiable from Namibia in exchange for Sable Antelope from Botswana) this project would entail facilitation by SADC consortium members to effect the delivery of a small founder population of *D.b.minor* to Botswana. This would also be dependent on adequate standards of protection and monitoring of animals in an area with adequate ECC, and potential for expansion of the population (e.g. an extended Khama RS, Moremi GR IPZ). The project would be a consortium activity that would encourage improved co-ordination in sharing expertise and rhinos between wildlife agencies in Botswana, Namibia and South Africa. Negotiations involving Namibia and RSA would be facilitated by developing a focal point for RSA, rather than individual agency or private land representation (e.g. SANP, Tswalu, etc)

Establishment of a rhino capture/translocation capability in Botswana

In order to carry out routine rhino capture and translocation operations that will be necessary in future, the rhino management capability within Botswana needs to be improved to reduce dependence on private operators from other countries. The project would determine the best options for development of rhino capture expertise and hardware in Botswana, including:

- availability of expertise, equipment and vehicles within Botswana
- availability and past use of capture units from other countries, including private companies
- existing use and potential upgrade of existing equipment and vehicles
- options for development of a rhino capture unit within DWNP and/or private sector in Botswana
- assessment of DWNP staff with game capture experience, and training needs.

The visit of a rhino capture specialist from the SADC region would be required for 1-2 weeks, which would include inspection of all existing equipment and installations (vehicles, bomas, etc), assessment of the likely demand/workload for a rhino capture unit in future and the opportunities for sharing rhino capture expertise and equipment with neighbouring range states.

7 NATIONAL LEGISLATION AND POLICIES

The current wildlife legislation is the Wildlife Conservation and National Parks Act (No 28) of 1992 (RoB 1992). In section 17 of this act, the rhinoceros (white or black not specified) is listed as a protected game animal in Botswana (Sixth Schedule). Copies of relevant pages of the Act are found in Annex 3.1

7.1 Penalties

Hunting or capture of protected game animals is prohibited, and where such an offence involves a rhinoceros, the offender is liable to a fine of P 100,000 (ca. USD 20,000) and to imprisonment of 15 years. The only qualification on this paragraph (2), is that a permit may be issued by the Director, for hunt or capture, if is satisfies conditions under Sections 39 and 40. Paragraph 1 (b) and (c) of Section 39 present the possibility of the Director, DWNP granting a permit to hunt or capture a rhinoceros in the interests of conservation.

Section 17 is reinforced by Section 67 (paragraph 6) and Section 70, which prescribe the same penalties for killing a rhinoceros, reporting the circumstances of the killing, failing to hand in horns within 7 days of the killing, possession of rhino horn and dealing in rhino horn.

7.2 Ownership of Rhinos

Sections 82 of the Act specifies that no live animals may be kept or possessed in confinement without a permit from the Director, DWNP. There is a penalty of a P 2,000 fine and imprisonment of two years for non-compliance. Section 83 states: '*the owner of land on which any animal is kept or confined, and which is enclosed by a game proof fence or in such other manner as may be approved by the Director, shall enjoy rights of ownership over such animal'*. These ownership rights are not lost if an animal escapes from such land or confinement. The consequences of confinement of rhinos on private land, and ownership rights for rhinos, have in the past been clarified where rhinos owned by the Government of Botswana are placed on private land (i.e. a custodianship agreement, DWNP/KRST 1994: see Annex 3.2). However, the rights of ownership of rhinos purchased from within or outside Botswana consequent to such purchase are not dealt with in the current legislation. There is no provision for community ownership of rhinos (fenced or unfenced), and there are no other sections in the legislation with clauses specific to rhinos.

7.3 Hunting and live sales of rhinos

Hunting of rhinos is not permitted (see above). There is precedent for live sales (purchase) of white rhinos (e.g. Khama RS, Tholo ranch) in Botswana.

8 DATA SOURCES

8.1 Names, addresses and contact details of all informants/interviewees

Johanne Mokgosi, Assistant Wildlife Officer, Management of Education Parks, DWNP, P O Box 131, Gaborone.

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Tjibae, M (2000) Report for DWNP on the 5th meeting of the IUCN/SSC AfRSG at Lake Manyara Serena Lodge Tanzania 27 May to 1 June 2000.

9 TRADE AND IMPORT/EXPORT OF LIVE RHINOS

9.1 CITES Management Authority

DWNP is the CITES Management Authority for Botswana. Permits for import of rhinos to Botswana are granted on receipt of an export permit (CITES).

9.2 Veterinary Controls

Veterinary permits are also required for import of rhinos (veterinary permits for export of rhinos are also required by RSA). According to Section 17 (qualified by Section 39) of the Wildlife Act, a permit is

required for the capture of a rhinoceros. Properties receiving imported rhinos (e.g. Tholo ranch in 1999) are checked for security by Wildlife Officers of DWNP.

9.3 Past Imports and Exports

White rhinos (*C.s.simum*)

Year	Source	Destination	No	Transaction
1967	Natal Parks Board, RSA	?	4	Donation
1974-1980	Natal Parks Board, RSA	Chobe NP & Moremi GR	91	Donation
1989	Mashatu, RSA	Gaborone GR	3	Donation
1994	Natal Parks Board, RSA	Mokolodi NR	2	Sale (R75,000 each)
1994	Natal Parks Board, RSA	Mokolodi NR	3	Donation
1995	Mafikeng GR, NWPTB, RSA	Khama RS	5	Donation, or Deposit?
1999	Thaba Manzi, Warmbaths, RSA	Tholo Ranch, Ghanzi	3	Sale (USD 40,000)
1999	Mafikeng GR, NWPTB, RSA	Khama RS	3	Donation

The exact nature of the transaction(s) involving the first five rhinos for Khama RS originating from NWPTB was not clarified during the country visit. DWNP staff indicated that these rhinos were on deposit/loan and could be reclaimed at any time, although the offspring were owned by Khama RS (or possibly Government of Botswana, see also 5.3 footnote, DWNP/KRST 1995). Given the ownership issues, notwithstanding the statement about management of a common rhino 'herd' in Botswana, there is a clear need for identification of rhinos, particularly offspring, at Khama RS. Given the current age structure, ear-notching operations are urgently required to resolve any future ownership issues involving DWNP, Khama RS and NWPTB.

10 HORN STOCKS

10.1 Control, Storage and Identification

Rhino horn is controlled by DWNP and stored at in a strong room at the ivory store in Gaborone. A register (ledger) of all horns is maintained, and a digital version was complied in spreadsheet form in March 1999 (DWNP 1999b). Horns are marked with permanent black marker only. Including recent additions to the Gaborone store (8 pieces in 1999), there is a total of 121 rhino horns weighing ca. 210 kg in stock in Botswana, including 9 horns in DWNP stores in Kasane, Serowe and Francistown. The presence of ca. 19 horns that are unmarked or have unreadable marks is matched by a similar number of horns that are missing from register entries. It was not clear from the register whether any horns in stock, except 1999 entries, could be traced to original source population.

10.2 Involvement in AfRSG rhino horn fingerprinting project

The DWNP has not provided samples of rhino horn to this project to date. There would be considerable benefit to the SADC region in terms of future detection of the source of horn seizures with Botswana's participation, particularly if a substantial number of samples can be sourced through the register, and used for expanding the source populations sampled for base-line studies.

NAMIBIA (Task 1.2 – 1.7)

Review by Rob Brett (Programme Co-ordinator) (Country visit: 28 August – 1 September, 2000)

1 MECHANISMS FOR PLANNING AND COORDINATING NATIONAL RHINO CONSERVATION EFFORTS

1.1 Rhino Management Authority

The Ministry of Environment and Tourism (MET) is the sole national management authority for black rhino. White rhino can be privately owned. However, permits are required from the MET licensing section for the import, export, translocation and hunting of white rhinos, including sale of live animals within Namibia.

1.2 National Rhino Strategy

A national rhino strategy for Namibia is contained within the current version of the Conservation Plan (MET 1997). This was first written in 1989, and has been updated twice since, the last update being in 1997 (H O Reuter (editor), plus contributions from other MET staff). The Conservation Plan is not officially endorsed by the Government of Namibia (e.g. by Minister of Environment & Tourism, or Permanent Secretary (PS)).

1.3 Action Planning

There is a separation of Conservation Plan (strategy) and periodic action plan(s). Action plans, mainly detailing rhino translocations to be carried out, have been produced since 1989 for individual years, but not for every year. Draft plans are presented to the Rhino Advisory Committee (RAC, described below), comments are received back from committee members, and this is followed by endorsement of the plan by the RAC. Staff of the MET scientific services (R Loutit, C Craig, P Erb) are presently drafting a five-year action plan (2001-2006: MET 2000a), which includes a restocking plan for new rhino populations. There is also an existing security plan (National Reaction Plan) for rhinos in Namibia (PRU 1998). The present Conservation Plan (strategy) document is comprehensive and not in immediate need of updating.

1.4 Coordination Mechanisms

The Rhino Advisory Committee (RAC) has been in existence since 1989, composed only of MET staff. These include the Deputy PS (Chair) and Rhino Co-ordinator (Secretary). There has been changing total composition of the committee since inception (varying from 15 to 5 members). Typically all MET head office staff are represented, plus the senior MET officer from each region of Namibia. Thus the RAC also acts as liaison between field and headquarters. The RAC meets 3-4 times a year, and works on a formal agenda and supporting documents. It is not primarily a decision making body, but advises the PS on rhino conservation matters. An annual translocation programme is drawn up at beginning of year, and, after passage through the RAC, is approved by the Minister. Recommendations are made by the committee on any matter relating to rhino conservation, no issues being excluded.

1.5 Focal Point

Rudi Loutit, the Namibian Rhino Co-ordinator, is the focal point for SADC programme. Peter Erb is the representative for the AfRSG, and the Southern African Rhino Management Group (RMG), AfRSG.

1.6 Potential for facilitation by SADC rhino programme

There is little or no requirement for assistance here. However, there is scope for SADC rhino programme to produce a regional template document, in order to ensure that strategies do not leave any items/issues relevant to rhino conservation unconsidered. This particularly applies to matters relating to generic issues common to many range states (e.g. management of a rhino metapopulation (within country state or regional), establishing new populations), and would be of particular value in the context of the potential resistance that some countries may have to external influence (or 'meddling') in a management planning exercise by a range state's rhino management authority. Equally, the high standards of planning for rhino conservation by Namibia would be a very useful as guidelines or use by other SADC range states.

2 EXISTING MECHANISMS FOR COLLABORATION WITH OTHER RANGE STATES
(Excluding SADC Rhino Programme)

2.1 Co-ordination with other range states

Presently there are no formal agreements for co-ordination on rhino conservation with other SADC rhino states. Historically, there has been extensive co-operation between the Namibian wildlife authority and the South African National Parks, largely maintained by personal contacts between respective senior members of staff. This mainly resulted in sales of rhinos to Namibia from South Africa, and exchanges of rhinos from South Africa for other ungulate species from Namibia.

In the early-mid 1970's, white rhinos were purchased from Natal Parks Board, for MET and private farms. From the mid-1980's rhino transactions between South Africa involved SANP, who received *D.b.bicornis* populations from Namibia for Augrabies, Vaalbos and Karoo NPs. Some of these transfers were sales; others were exchanges for giraffe, buffalo and/or white rhino. In the mid-1990's white rhinos from Kruger NP (to Namibia) were exchanged for other species, including 10 white rhinos moved to Etosha NP in 1995. These transactions were commercial, and the perception from the Namibian side is that SANP got considerable benefit from them. MET have since sold 8 *D.b.bicornis* (at auction) to the Tswalu desert reserve in South Africa, and one to Lisbon zoo. MET would like to obtain more white rhinos in future, although Kruger NP would not be the desired source unless animals tested negative for TB. They would like to explore the possibility of exchanging roan antelope for white rhino from the KZNW (ex-Natal Parks Board).

2.2 Existing commitments with other SADC range states

At the time of independence, Namibia made a Presidential-level commitment to provide Botswana with two black rhinos, though this donation has not yet been taken up. A cow and calf captured in the Kaprivi area in 1989 (candidates for *D.b.chobiensis*, at one time perhaps the most appropriate ecotype for the northern part of Botswana: Moremi GR, Chobe NP) were originally earmarked for translocation at the time. The calf subsequently died, and the cow has since been moved into a *D.b.bicornis* population. A further two rhinos were to be made available for Botswana in exchange for other species, with waterbuck and sable antelope discussed, although these negotiations were complicated by veterinary issues and the lack of quarantine facilities in Botswana acceptable to Namibia. These possible transfers of rhinos by donation or exchange were discussed at PS level with Botswana up to 1999. Given the fact that the most appropriate black rhino subspecies for Botswana is probably *D.b.minor*, the RAC has also considered the option of moving *D.b.bicornis* to RSA (Addo, Augrabies or Vaalbos NP), with SANP releasing an equivalent number of *D.b.minor* from Kruger NP for translocation to Botswana. An alternative arrangement would be for Botswana to accept the *D.b.bicornis* from Namibia, and then exchange with *D.b.minor* from RSA subsequently.

3 RHINO POPULATION STATUS

3.1 Summary Statistics on rhino numbers, distribution and trends

Information on the total numbers of rhinos by population in Namibia is restricted, and Namibia has concerns over releasing information on rhino numbers and distribution (and deployment of law enforcement staff) with the risk of this information being used to target rhino populations for poaching. Summary information on population totals, and the size of key and important populations of black and white rhinos in Namibia is provided to the AfRSG which maintain a database of these totals presented at successive meetings of the group.

Namibia Estimated Totals (1999):

Species	**Total**	**Trend**
Black Rhino (*D.b.bicornis*)	697	Up
White Rhino (*C.s.simum*)	163	Up

The conservation goal of the current Conservation Plan (MET 1997) is 2,000 black rhinos, and future progress towards this goal is largely dependent of the availability of protected habitat, and the capacity to manage and protect this number of animals.

3.2 Population monitoring and reporting

Rhino monitoring in Namibia is based largely in identification of individual animals (e.g. using full-moon waterhole counts during dry seasons, and regular patrols on foot, horseback or from vehicles). in the large populations of black rhinos (e.g. Etosha NP, Kunene), there are constraints on what is logistically possible, and the approach to resolving the problem of clean (unidentifiable) animals, and unseen animals still needs to be resolved. Within the limitations of resources in the routine census of large rhino populations, and alternative approach being considered would involve less emphasis on estimation of the total population, with better information on the numbers and breeding performance of a sample of the population. This can be measured against a model or indicators of expected performance, assuming adequate knowledge of distribution and the frequency of visits to census points (largely waterholes at night).

Radio-telemetry has been used extensively in Namibia in monitoring individual animals (ranging patterns, drinking frequencies, etc), although collars design continues to restrict effective monitoring to the first 6-12 months after deployment. MET have been proactive in testing new technologies for use in rhino monitoring (e.g. digital photography, radio-telemetry data-logging, etc), and wish to continue these developments with assistance from the SADC rhino programme (see section 6).

National rhino databases for black and white rhino are maintained at the Etosha Ecological Institute (P Erb), although this excludes the database for the Kunene black rhino population (maintained by Save the Rhino Trust (SRT)). On the basis of routine monitoring and regular complete census exercises, SRT maintain a sightings and individual animal register, and co-ordinate these activities and reporting with MET. Population and country rhino totals are provided from these databases.

MET also maintains a rhino mortality database, including information on poached animals. This could be linked to the MIKE programme for elephants, and there is considerable scope for common approaches to monitoring poaching of both species, particularly if a common approach to patrol/sampling effort can be devised. At present there is very limited collection and use of intelligence information, and a need for improved use and analysis of existing intelligence data (see section 6).

3.3 Requirements for surveys and monitoring

There is a need for better information on the size, distribution and performance of the black rhino populations of Etosha NP and Kunene, with particular regard to the requirements for future translocation of rhinos from these areas in order to maintain a supply of rhinos to new areas of protected habitat (e.g. Private Land Custodianship scheme). Together with use of alternative approaches to monitoring trends and performance of these populations (e.g. using indicators from a representative known and easily identifiable sample), the use of ear-notching to increase the proportion of identifiable animals is considered very important. A programme of ear-notching of clean black rhinos in Etosha NP has been successful in notching 115 animals in the park since 1989 without any associated mortality. Maintaining a target proportion of notched or identifiable animals would need estimation of the number of animals needed to maintain that proportion by notching each year. The present data available from rhino monitoring in Namibia is adequate for safe and conservative offtake of rhinos from large populations (e.g. Etosha NP) to form new populations. The limitation on continued growth of Namibia's black rhino population is primarily the suitability and availability of areas to form new or expanded populations.

4 MANPOWER AND OTHER RESOURCES FOR RHINO CONSERVATION

4.1 Anti-poaching resources

As with information on population sizes and locations, the MET is concerned about potential misuse of information on staffing by protected area for rhinos. Consequently, related information on staff numbers and densities in Namibia is not reproduced here. The point was also stressed that using staff numbers to indicate level of effective protection available for rhino populations can be misleading when the effectiveness of a given number of field staff is compromised by the lack of support for these staff to operate in the field (subsistence and travel, performance-related incentives, patrol allowances, equipment, etc). Field staff numbers at Etosha NP have increased significantly in the last 6 months following drafting of 120 ex-combatants to MET staff in the park. However there is little provision in existing budgets for their support or routine deployment on anti-poaching duties.

Summary operating budget information for Etosha NP is provided below:

Area	Type	Size (km^2)	Operating Budget (USD)	USD/km^2
Etosha NP	S	22,175	246,000	11

In addition to the MET Wildlife Protection Services (Anti-Poaching Units), Etosha NP can call on the Namibia Defence Force and Police (including the Protected Resource Unit (PRU)), as necessary. The APU staff based at Etosha do not currently record intelligence information, or use information debriefed from patrols. Although the police have an informer network outside the park, there is a perception that the difficulty in evaluating the threat to rhinos is an additional constraint in evaluating effectiveness of deployment of staff for protecting rhinos or any link between deterrence of poaching and scout densities. Recent cases of poaching of white at a private rhinos (the only rhinos known to have been poached in Namibia in the last four years) also indicate a lack of the deterrent effect of heavy sentencing of convicted poachers (e.g. 10 years) for the same offence (at the same place).

MET junior staff salaries are summarised below:

Staff Salaries USD pa	Low	High
Scout	1720	2473
Ranger	2904	3903

4.2 Expertise available for specialised aspects of rhino management

There is a wide range of expertise specific to rhino conservation and management available in Namibia, both within the MET, and (more available) outside it, particularly former members of staff. The latter include former senior park managers/wardens with extensive rhino experience (e.g. A Cilliers), veterinarians (e.g. H O Reuter) and capture staff (e.g. L Geldenhuys). MET staff can be contracted to carry out short consultancy work following approval from the PS MET, as long as the intended work does not compromise or conflict in any way with normal duties.

4.3 Specialised equipment available for rhino management

MET has a fully-equipped and staffed rhino capture unit, with veterinary and aircraft (helicopter, fixed-wing) support. Inside the country, the capture unit has been used for translocating white rhinos at private landowner's expense. The MET capture truck(s) have also been used in the past for moving animals outside of Namibia (e.g. translocation of black rhinos to Tswalu Desert Reserve in RSA. Hire of the MET capture unit including the truck(s) based in Windhoek (Mercedes 4 x 4, Scania Horse and '6-pack' trailer for transport of 6 rhinos at one time) would be possible for short periods.

5 PARTICIPATION OF NON-STATE AGENCIES IN RHINO CONSERVATION

5.1 Community Involvement

There has been a long-standing and successful involvement of local communities in the conservation of the black rhino population on communal land in western Kunene region. This has mainly involved employment of local inhabitants as rhino monitoring staff (SRT) or community game guards (IRDNC), with additional opportunities for economic returns from ecotourism and local crafts. The primary function of the rhino-related activities involving communities has been information and monitoring with a secondary protection function (e.g. deterrence of poaching). The perceived success (one of the few stable or increasing free-ranging rhino populations on communal land areas) has been dependent on the input, funding and direction of NGOs, with tolerant communities receiving benefits in an area with zero agricultural potential. Further options for realising the value of rhinos in these areas could involve the sale of live rhinos to existing interested parties outside Namibia (e.g. Tswalu desert reserve), or private landowners inside Namibia (if they were allow to purchase black rhinos themselves).

The establishment of several conservancies across the Kunene rhino range has inevitably introduced additional political difficulties to the challenge of equitably sharing of any benefits/income available (e.g. from ecotourism concessions, hunting, sale of live rhinos). Consequently, there is a pressing need for a common agreement across conservancies on the priorities for conserving the common rhino population within an agreed rhino management plan which can be then implemented within constituent conservancy plans under a common framework for rhino surveillance and monitoring.

Further, the responsibility for rhino surveillance and protection in the future has to be taken on by MET in co-ordination with communities to remove the existing dependence on NGOs for adequate standards of rhino monitoring. There are a number of impediments to obtaining agreement between stakeholders in the areas related to the numerous existing plans (land use, conservancies), and the fact there is no legal means of control over human activities in the area (e.g. tourist access, etc), some of which pose an immediate threat to the survival of threatened wildlife in the western Kunene, including rhinos.

In other areas with rhinos in Namibia, although there are no specific rhino-related community programmes, there are community programmes attached to particular protected areas (e.g. south west side of Waterberg NP).

5.2 Local and International NGO Involvement

WWF has been funding rhino conservation-related activities and equipment in Etosha NP for the last 10 years, focused on rhino monitoring and support for anti-poaching and filling in 'gaps' in the routine budget. This has amounted to ca. 1 million N$ in the last two years (US$ 70,000 p.a.). A significant activity, the ear-notching of rhinos in Etosha NP, has been supported by WWF during this period. Additional donors to rhino conservation in the past decade have been: AWF (Waterberg NP, US$ 1,500), Save the Rhino International (Waterberg NP, Kunene), African Wildlife Management (US$ 5,700), Raleigh International (construction of patrol camps). Other MET rhino areas (Mangeti GC, Hardap) and activities (Game capture unit) have been entirely funded by MET.

In order to maintain present standards, there will be increasing need for donor/NGO support for rhino conservation in MET-managed areas in future. MET operating budgets have been declining in real terms year on year. For example, although the operating budget for Etosha NP increased by ca. 10% over the last two years, the proportion of the budget per employee decreased by 80%, largely due to the introduction of 120 ex-combatants to the staff complement in April 1999.

5.3 Private Sector Involvement

Namibia has established a successful custodianship scheme for black rhinos on private land, involving a formal process of selection of candidate farms for receiving small populations of government-owned black rhinos and subsequent appraisal of rhino monitoring, and management and security standards in recipient areas. The scheme, which commenced with the first placement of rhinos on private land between 1993 and 1997, is at an advanced stage and still progressing. Initial assessment of farm properties for placement of black rhinos is conducted by selected MET staff using a standardised set of criteria and a scoring system (MET 1993a). Successful properties enter into a Memorandum of Agreement with the MET (1993b, now under revision) over responsibilities and conditions on either side. There is a comprehensive background document (MET 1998) that provides detailed information on the custodianship scheme, and includes material for the instruction and use of custodians in maintaining adequate standards of monitoring and management.

Due to the size of appropriate farms available, and availability of rhinos, rhinos were mainly placed in founder groups of six animals per property (3m:3f). After the initial period of translocation of rhinos out of Etosha NP, and placement on seven selected properties (1993-97), there was a pause in translocations (1998-99), associated with a change in Minister and PS in the MET. After submission of justification for continuation with further placements, and approval, a further three properties received rhinos in 2000, including transfer of rhinos from the most successful custodianship area where rhino numbers had more than doubled since 1993. Since many of the recipient farms have limited capacity and populations are likely to remain small (e.g. < 10), the future genetic and demographic health of the custodianship metapopulation will depend on exchange of rhinos (e.g. exchange of breeding males) between populations on a regular basis. Through the present rhino co-ordinator, the MET continues to make regular checks on rhino monitoring standards on custodian farms. In 2000, re-training of monitoring staff in three areas has been arranged using staff of SRT.

With the continuing demand for protected habitat with which to stock rhinos moved from Etosha NP, larger areas will need to be considered for stocking, particularly if groups of farms can be persuaded to enter into common agreements for managing wildlife, including rhinos. There is considerable potential for developing such private conservancies at Erongo (13 farms covering ca. 20,000 km2) and Eden, where in the latter case, communal areas of Bushmanland could be included to open up a very large area for rhino conservation. Conditions for agreement on adequate standards within and between constituent properties are potentially improved through negotiations with several landowners, who are

often coincidentally relatives. One area that has been considered for development as a rhino sanctuary (Hobatere, on western Etosha NP boundary) has already received approval from the RAC (July 2000) and requires government confirmation of appropriate land classification, as well as support for planning the necessary upgrade of infrastructure (fencing, water) and security.

6 PROPOSED PROJECTS

Project Concepts

Rhinos in communal areas – Kunene Region, Namibia

SADC RPRC Activities: 3.1, 4.1, 4.2, 5.3, and 7.1
Lead agency: SRT
Collaborating agencies: MET
Possible Timing: Semester 4

This project aims to build capacity for rhino monitoring in communities and the government wildlife authority, including specific training for selected members of the community/conservancies and MET WPS, and further implementation of research studies and management planning for conservancies that have small numbers of rhinos *in situ*. This transfer of expertise from the main NGO conducting rhino monitoring and surveillance to local communities and MET staff, is vital to the future conservation of the second largest population of *D.b.bicornis* in the region. The SADC Programme would also facilitate and support additional funding proposals necessary to implement the project over six years.

Regional workshop and collaboration on design and operation of intelligence databases

SADC RPRC Activities: 4.1, 4.2, and 5.2
Lead agency: MET, NP PRU
Collaborating agencies: KZNW, SADC Rhino Management Authorities on request
Possible Timing: Semester 3

This project would assist national rhino management authorities and/or their police counterparts in the SADC region to develop effective means for capture, storage and use of intelligence data, using existing operating databases as a guide. A generic intelligence database would be developed for regional use following a workshop held in an area where an operating intelligence network and database is in routine use (e.g. KZNW area(s)). Estimated cost would include workshop and facilitation, and travel and accommodation for range state representatives, and the production of an electronic manual/booklet.

Regional collaboration on design and operation of rhino monitoring databases

SADC RPRC Activities: 4.1, 4.2
Lead agency: AfRSG
Collaborating agencies: SADC Rhino Management Authorities on request
Possible Timing: Semester 3

Building on the rhino databases task completed in Semester 2, this project would develop guidelines and a structure (and manual) for a generic rhino monitoring and population database (based on existing rhino databases developed in *MS Access*, using individual animal and sightings registers: Kenya, Namibia, SADC programme/Zimbabwe, RMG?). The product would be a digital booklet. A subsidiary aim would be to allow the import of sightings data to an upgraded RHINO population estimation package, and import of estimates derived to a population level database. This project could be carried out remotely through contacts between database developers and managers in the SADC region, with additional input from Dr R Amin (ERA/ZSL: developer of the Kenya Rhino Management System).

Development of a management plan for the Kunene black rhino population

SADC RPRC Activities: 1.2, 5.1, 5.3, and 7.1
Lead agency: MET
Collaborating agencies: WWF, SRT, IRDNC
Possible Timing: Semester 4

A formal process of developing a new management plan for the western Kunene rhino population would be funded and followed, involving all stakeholders (MET, Communities, Conservancies, NGOs). The rhino plan would 'sit' under the present Namibia rhino conservation plan (MET 1997), and, where possible, complement existing conservancy and land use plans. This would involve an initial stakeholders meeting to agree on and sign up to management principles and monitoring needs across the Kunene rhino range, facilitated by a neutral consultant. This would be followed by a second meeting to develop plans for capacity building for rhino monitoring within the conservancies (to be addressed by project (i)), and agreement between all parties on managing rhinos (e.g. removal of outliers and surplus animals from areas at ECC, to stock other areas of Namibia) and potential sources of income derived from rhinos (e.g. live sales, ecotourism). The initial aim would be to try and pre-empt and resolve possible conservancy-related differences over use of rhino-related income by obtaining initial agreement on conservation principles that would apply across all the range and all constituent conservancies.

Investigation and deployment of new technologies for rhino monitoring

SADC RPRC Activities:
Lead agency: MET
Collaborating agencies: WWF
Possible Timing: Semester 3/4

A pilot project for testing of new or emerging technologies for application in rhino monitoring and surveillance. Its scope would be wide enough to include any technology that might be of use in survey, census and/or monitoring of rhinos, and have components developed potentially in several SADC areas with specific demands. The following fields would be investigated:

- Monitoring of rhinos in remote/low density situations
- Camera-trapping at water holes, rhino paths (including elephant filter)
- Spoor identification (outline trace, digital camera ID)
- Monitoring of marked animals at fixed points (water points, salt licks)
- Transponder implants and detector antennae, data logging
- Digital Photography and Videography
- Radio-tracking datalogger
- Data capture for rhino monitoring and patrol reporting
- Customisation and Use of GPS dataloggers (*Cybertracker*), following recommendations of WWF database consultants (SADC programme task: Semester 2)
- Monitoring of rhino monitoring/management vehicles and vehicle-borne staff
- GPS vehicle position/track logging, periodic data download

Metapopulation management: detailed study of rhino interactions following translocations

SADC RPRC Activities: 3.1, 6.2
Lead agency: MET
Collaborating agencies: WWF, SRT, IRDNC
Possible Timing: Semester 4

Given the requirement of routine transfer of rhinos between small populations as part of management of the Namibian black rhino metapopulation, solutions to the problematic introduction of males and females to new populations must be found. One approach would be to study the initial interactions between introduced and resident animals in populations of differing composition (including introduction to females to populations founded by all male groups). This would be achieved by radio-telemetry, particularly if a small light GPS collar could be developed, which would only need to stay on the animal for 3-6 months, and not require any remote data-download function (The possible development of light GPS collars for rhino could be considered during the deferred radio-tracking task from Semester 2).

The result of a study would lead to guidelines for prediction of appropriate candidates (age/sex) for introduction to populations of different composition.

Developing and expanding populations outside protected areas in Namibia for *D.b.bicornis*: Hobatere and Erongo

SADC RPRC Activities: 3.1, 7.1
Lead agency: MET
Collaborating agencies:
Possible Timing: Semester 4

In order to provide enough protected habitat for the regional metapopulation of *D.b.bicornis* to increase to minimum viable numbers (e.g. national goal of 2,000 animals in Namibia), larger areas need to be developed for stocking new populations. Two areas identified for development as large fenced sanctuaries or private conservancies require funding for planning and development: Hobatere (320 km2) and Erongo (potentially 20,000 km2). The project would assist with development planning for both areas, and identification of funding for necessary infrastructure to minimum standards for management and protection of black and white rhinos.

7 NATIONAL LEGISLATION AND POLICIES

Legislation relating to conservation and protection of rhinoceroses in Namibia is covered by the Nature Conservation Ordinance of 1975 (GoN 1975), also including proclamation AG 42 of 1980, and a further amendment of 1990 (Annex 4.1). The relevant clauses are provided in Annex 1 of MET (1998), and also summarised in the Conservation Plan (MET 1997). Both species of rhino have the same legal status regardless of their origin, locality or ownership (state/private). There is a policy document covering the management and control of rhino horns (MET 1999a). There is a revision of the 1975 Ordinance in preparation, which will include update of the definition of categories of protected area (MET 2000b).

7.1 Penalties

a) Rhino are designated specially protected game in Ordinance 4 of 1975, which specifies that no person may hunt such game without a permit from the Executive Committee (excluding Article 26 (4) (a)) with a fine of R1,150 - R2,500 and/or 2 - 6 years imprisonment if they should do so.

b) Special legislation was promulgated with regard to possession, utilisation, export, import, trade and transportation of and with any part of a rhino (and elephant) in Proclamation AG 42 of 1980, except if a permit was issued. The maximum sentence was a fine of R6 000 and/or 6 years imprisonment, as proposed by the ARSG for southern Africa.

c) In 1990 the legislation was amended to increase the sentence to a fine of R200 000 and/or 20 years in prison.

d) All aspects of possession, transport, sale, capture, hunting and disturbance in game reserves of rhino are under legal control through the above-mentioned legislation while certain other aspects are also covered by veterinary legislation.

7.2 Ownership of Rhinos

The framework document for private sector involvement in rhino conservation (MET 1998: Annex 4.2) provides detail on legislation relating to ownership, custodianship and use of rhinos (Chapter 3).

7.3 Hunting and live sales of rhinos

White rhinos can be hunted and trophies exported to several countries, and it is possible, under certain conditions and after MET approval, to practise non-lethal 'hunting' methods, which may include the removal of horn. Black rhino belonging to the State can be sold to private individuals and exported from Namibia.

8 DATA SOURCES

8.1 Names, addresses and contact details of all informants/interviewees

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Mr Mike Hearn, Save the Rhino Trust, P O Box 224, Swakopmund, Namibia. mikeh@rhino-trust.org.na

8.2 Documentation

MET (1993a) Farm assessment for the placement of black rhino. Criteria for qualification and selection of farms for black rhino custodianship.

MET (1993b) Black rhino custodianship programme. Initial memorandum of agreement for placement of black rhinoceros (*D.b.bicornis*) outside protected areas in Namibia (found at end of Annex 4.2)

MET (1997) Rhinoceros conservation plan for Namibia. 40 pp (Restricted document)

MET (1998) Rhino Conservation in Namibia: a framework for private sector participation (Reuter, H-O & Lindeque, M, comp) 92 pp (Annex 4.2)

MET (1999a) Policy on the management and control of trade in parts and derivates of elephants and rhinos. (Lindeque, P M & Lindeque, M, comp).

MET (1999b) Conservation of rhinoceroses in Namibia. Annual report for CITES (Loutit, R & Lindeque, P, eds)

MET (2000a) Draft five-year plan for black rhino conservation in Namibia. A concept for the period 2000-2004.

MET (2000b) Policy on Categories of Protection of Wildlife and the Taxonomic Coverage of Future Legislation on Wildlife. Draft.

Government of Namibia. Nature Conservation Ordinance, 1975, including proclamation AG 42 of 1980, and further amendment of 1990.

PRU (1998) National Reaction Plan for the security of rhino and elephants in Namibia. Protected Resource Unit, Namibia Police (Mostert, I & du Toit, F, eds).

8.3 Sources of Digital Information

Databases

Dr Peter Erb, Chief Warden, Etosha National Park, P O Box 6, Okaukeujo via Outjo, Namibia. eei.staff@mweb.com.na

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9 TRADE AND IMPORT/EXPORT OF LIVE RHINOS

9.1 CITES Management Authority

MET is CITES management authority for Namibia. White and Black Rhino are on CITES Appendix I for Namibia, with the exception of White Rhino imports from RSA, which could be re-exported under Appendix II.

9.2 Veterinary Controls

For live import/export of rhinos, permits are required from MET, Veterinary Services and CITES. An annual report is provided to CITES by MET (e.g. MET 1999b), which summarises rhino population status, monitoring programmes, incidents of illegal trade in rhino horn, and incidents of illegal hunting of rhinos.

9.3 Past Imports and Exports

Namibia has exported *D.b.bicornis* to SANP and private land in RSA since the mid-1980's (details incomplete):

Year	Source	Destination	No	Transaction
1980's	Etosha NP	SANP: Augrabies, Vaalbos, Addo NP	?	Sales, Exchanges for other species
1990?	Etosha NP	Lisbon zoo (since moved to Addo NP, via Augrabies NP)	1	Sale
1995	Etosha NP	Tswalu desert reserve	8	Sale

White rhinos have been imported from RSA extensively since the mid 1990's (details not available), largely in exchange for other game species, and including the following:

Year	Source	Destination	No	Transaction
1995	Kruger NP	Etosha NP	10	Exchange for other species

10 HORN STOCKS

10.1 Control, Storage and Identification

Rhino horns are controlled and stored in two places in Namibia: at the two strong rooms at MET HQs (Resource Management) in Windhoek, under permanent police guard: ca. 30% of total stock at a bank strong room in Windhoek: ca. 70% of total stock.

A stock take was done in 2000. Horns are all marked with a Permit Number in black permanent marker. Namibia has been experimenting with Ultra Violet fluorescent liquid (invisible), from which a unique chemical signature can be traced. No transponders have been used for tracking rhino horns.

The Namibian Police currently only deal with seizures. The new policy on controls on rhino horn (and ivory) coming into effect (MET 1999a) includes a schedule on horn seizures. Horns received from the Police are given a permit number from MET (all recorded on database). Police provide case completion reports (including horn data, value, sentence, forfeiture to state), and hold horn in the short periods between its seizure and handing into MET prior to a court case.

MET has recently provided a complete register of horn stocks to TRAFFIC, and is co-operating on completing data forms on horn seizures.

10.2 Involvement in AfRSG rhino horn fingerprinting project

Namibia (MET) has been extensively involved in the rhino horn fingerprinting project, and has supplied horn samples from all representative population areas in Namibia. Results have shown very distinct profiles from horn sampled in different parts of Namibia, in particular the western Kunene population.

SWAZILAND (Task 1.2 – 1.8)

Review by Richard Emslie (AfRSG) (Country visit: 28 August to 1 September 2000)

1 MECHANISMS FOR PLANNING AND COORDINATING NATIONAL RHINO CONSERVATION EFFORTS

1.1 Rhino Management Authority

The situation in Swaziland is somewhat unusual given the Swazi monarchy's executive powers, and that the Head of State, his Majesty King Mswati III is senior to the elected government of the day. Up until the promulgation of Legal Notice number 142 of 1998 by King Mswati III on the 12 November 1998 (Annex 5.1), the Swaziland National Trust Commission (SNTC) was the official body representing Swaziland internationally as well as being responsible for CITES matters and administration of the Game Act. However following the issuing of this legal notice, wildlife matters were removed as a government responsibility assigned to the Ministry of Tourism and Communication, and instead these responsibilities were transferred to the King's office.

On the 30th November 1999, the King's Office wrote to the head of the CITES Secretariat (Annex 5.3) informing him of the change in Swazi representation at CITES, and that certain named SNTC members were no longer were Swaziland's CITES representatives, and listing four people who instead would be authorised Swazi signatories for CITES matters (two of those listed are from the Kings Office and two from Swaziland's Big Game Parks (BGP) with at least one from each body to be a signatory).

On the 6th March 2000, the Minister's office in the Swaziland Ministry of Foreign Affairs and Trade wrote to the SADC rhino programme c/o Dr Yemi Katerere (of IUCN-ROSA) explaining that since the 30th November 1999 the administration and the day-to-day management of the Game Act, CITES and all associated conventions/agreements on wildlife had been delegated to BGP, specifying the Head of the organization Mr Ted Reilly as the contact person (Annex 5.2). IUCN HQ was similarly notified by a letter from the Ministry of Foreign Affairs and Trade (Annex 5.4). Annex 5.5 is a copy of a royal warrant confirming this arrangement, and the delegation of responsibilities to BGP by the King.

SADC WTCU needs to be informed of these changes if they have not already been, as SNTC and not Big Game Parks were invited to, and attended the SADC rhino programme stakeholders meeting in March 2000. According to BGP, some confusion has been caused with the SNTC on occasion continuing to, or being asked to represent Swaziland at international or regional meetings (e.g. SADC rhino programme stakeholder workshop or pre-CITES SADC range States meeting), when they no longer have the authority and mandate to do so (Annexes 5.1, 5.2, 5.3, and 5.4).

Since 1995, when the last three white rhinos in Mlawula Natures Reserve (managed by the SNTC) were translocated out as a precautionary measure (Boycott in report to SADC Stakeholders Planning Workshop) all rhinos in Swaziland have been conserved on land managed by BGP. One reserve managed by BGP is a Royal Reserve held in trust for the nation, while another is privately owned by BGP. However in the latter case the properties that make it up are in perpetual trust under a constitution assuring their long-term survival. Although private, the land has been legally proclaimed and has the highest legal conservation status possible. This enabled BGP to insist that electricity supply lines had to make a detour round and not through the reserve. In addition the reserve must be managed in terms of the aims of the act (i.e. for wildlife conservation) that would prohibit changes of management (land-use) in the future. Any donated land in Swaziland can be got back if it is no longer being used for the purpose it was donated.

1.2 National Rhino Strategy

Swaziland does not have a formal national rhino strategy. However in managing Swaziland rhinos, BGP seeks to breed animals up as fast as possible and to biologically manage populations (through translocation) to maintain them in a productive state.

1.3 Action Planning

Management is on an informal ad hoc day-to-day basis.

1.4 Coordination Mechanisms

No information on co-ordination mechanisms was provided.

1.5 Focal Point

Mr Ted Reilly (AfRSG, SADC, CITES) and Mr Mickey Reilly (RMG, RESG) of BGP.

SNTC (who up till late 1998 were the official agency representing Swaziland on nature conservation matters) were invited to represented Swaziland at the SADC rhino programme stakeholders planning workshop. However, following the transfer and change in official responsibilities for nature conservation and who should represent Swaziland officially at international wildlife forums (from Government Ministry to Kings Office and from SNTC to BGP - see Annexes 5.1 to 5.5), as the recently designated authority and the only agency that currently manages rhino in Swaziland, it would be appropriate for SADC WTCU to approach BGP to ask them to nominate the focal point for the SADC programme.

1.6 Potential for facilitation by SADC rhino programme

Given the current absence of a national strategy for rhino conservation, it is anticipated that Swaziland would benefit from the assistance of the SADC RPRC in developing one. Swaziland currently only has two rhino parks with one black rhino and two white rhino populations. BGP have indicated they would appreciate external expert advice on their estimates of carrying capacity and stocking rates of black rhino and other browsers as this would help them fine-tune their biological management.

2 EXISTING MECHANISMS FOR COLLABORATION WITH OTHER RANGE STATES
(Excluding SADC Rhino Programme)

2.1 Co-ordination with other range states

There are no formal links with other range states although Swaziland's BGP are represented on both the RMG and the AfRSG. BGP have worked closely in the past with SAPS's ESPU and selected undercover Wildlife Investigators working for some of South Africa's rhino management agencies.

Mr Mickey Reilly (BGP) has attended a number of RMG meetings and Mr Ted Reilly is an AfRSG member. Swaziland's BGP has also actively participated in the Rhino and Elephant Security Group of Southern Africa.

The last introduction of black rhino from KwaZulu-Natal to Swaziland was sponsored by the President of Taiwan as a gift to the King of Swaziland. These animals are being looked after on behalf of the King by BGP (a private run organization). The initial black rhino founders came from Zimbabwe.

In September 1994, Swaziland was one of the original signatories of the "Lusaka Agreement on Cooperative Enforcement Operations directed at Illegal Trade in Wild Fauna and Flora" more commonly known as the "Lusaka agreement".

2.2 Existing commitments with other SADC range states

In practice while the "Lusaka Agreement" has facilitated cooperation between individual parties in dealing with cross-border wildlife crimes, delays have been experienced in establishing a permanent task force (partly up as of the failure of some countries to ratify the agreement), thereby hindering the operations of the agreement.

3 RHINO POPULATION STATUS

3.1 Summary Statistics on rhino numbers, distribution and trends

For security reasons, exact numbers of rhinos and their location is considered classified information by BGP. However, on a confidential basis, population sizes and trends have been given to the AfRSG. At the request of BGP, the exact totals of rhino are even kept continental, with the result that the country

totals (10 black and 50 white rhino) included in continental population estimates are approximate and not exact figures. Both black and white rhino numbers are increasing, and the trends are up.

3.2 Population monitoring and reporting

Rhino are known and monitored using individual ID based methods. In the case of Swaziland's black rhino population, an effort is made to sight every animal every two to three days, and the failure to do so is likely to the lead to a specific search for that animal.

As rhino numbers and distribution is classified information, no detailed written status reports are produced by BGP. However, details of some rhino management operations (e.g. the methods used in the very successful reestablishment of additional black rhino into an existing population) have been the shared at rhino conservation meetings such as the RMG. As with a number of other populations, Swaziland has experienced problems with elephants killing white rhino. Swaziland recently lost three adult white rhino and two calves to elephants, and as a result two elephants suspected to be involved were shot.

3.3 Requirements for surveys and monitoring

No population surveys are required. BGP requested external expert assistance to review of the estimate of black rhino carrying capacity and make recommendations on stocking levels of other browsers.

4 MANPOWER AND OTHER RESOURCES FOR RHINO CONSERVATION

4.1 Anti-poaching resources

In the main rhino park, tourist game drives in BGP open Land Rovers driven by BGP staff (with radio comms) adds to security. There are 12-13 Land Rovers, most of which are tourist Land Rovers, plus a Mazda 4x4 and a Land Cruiser that are management vehicles. At any time during the day three tourist vehicles may be out with a BGP driver and possibly a guide. Tourists are not allowed to drive privately in the park adding to control. The other rhino park has three tourism vehicles and two management vehicles. It was felt that motorbikes if bought would further enhance rapid reaction capabilities.

In one park, in addition to Mickey Reilly there is one head ranger and 12 field ranger posts translating to a manpower density of just under 1 man/5 km^2, while in another park the rhinos are consolidated and protected in an ~1,250 ha enclosure. In this park (not just the rhino areas) there is one head ranger and 20 ranger posts (translating to an overall manpower density 1 man/14 km^2. BGP has another 12 rangers at Mliliwane that could be called upon in an emergency. Thus manpower density is high. There is regular patrolling with tourism activity further adding to security.

Information on salary levels was provided and but it was requested this information be kept confidential. Seen in the context of the local economy, remuneration levels were relatively good. Remuneration included a performance bonus, plus a uniform and food. Staff get one month's paid leave and five days off/month.

In keeping with many rhino management agencies, BGP run an informer network. Interestingly, staff who report on other corrupt staff are paid double the normal rates in an attempt to minimize internal corruption. The more people are convicted the higher the bonus. It must be a good case with sound verified information to get a bonus.

4.2 Expertise available for specialised aspects of rhino management

BGP uses experienced rhino vets (e.g. KZNW's Dave Cooper) and capture teams from neighbouring South Africa (e.g. Grant Tracy). There are only 8 people appointed as Game Rangers in Swaziland, and they are able to handle drugs under the law. Thus BGP could act in an emergency.

4.3 Specialised equipment available for rhino management

BGP to have a specialized giraffe-trailer that can be converted into a rhino capture trailer with the crate and loading ramps built-in as part of the trailer itself. There is also one truck available.

5 PARTICIPATION OF NON-STATE AGENCIES IN RHINO CONSERVATION

5.1 Community Involvement

There are currently no direct community programmes around Parks managed by BGP. However, at a meeting to discuss possible projects and cooperation as part of the Lebombo Spatial Development Initiative, Mr Ted Reilly offered to provide support for a community conservation programme in the area surrounding Hlane. However while willing to support a genuine cooperative community conservation project, BGP were not interested in supporting a one-way "hand-out" scheme (which are perceived as dangerous given concerns that this can create problems of expectations if such donations are not repeated, or the level of resources provided declines), with the result that Big Game Parks only committed themselves to supporting this programme on the condition that the neighbouring communities themselves first demonstrated a sincere commitment to the programme themselves by each providing at least one head of cattle. To date there has been no commitment of this kind from the neighbouring communities, and therefore nothing has happened from the side of BGP.

5.3 Local and International NGO Involvement

Over the years big Game Parks has benefited substantially from a number of both local and international donations.

For example, Mkhya has benefited from donations by:

- WWF (water programme),
- Dr and Mrs Schneier of Exeter investment Pty Ltd (rhino protection),
- European Union (fencing)
- UK government (R70,000 for bomas)
- Ngwenya Glass (percentage of sales),
- HRH Prince Bernhard of The Netherlands (purchased 1000 ha of additional land for E1.4m),
- Engen
- Rhino Rescue Trust of Great Britain,
- AID Environment (advice and resources for development and the environment)
- Douglas Armitage
- Steel and Wire International
- Don Ewing
- Rurul Pumps
- Raymond and Ingrid van der Meer
- Rhino Foundation-the Netherlands
- Tony Mashant
- Suzi candles that

Much of BGP operating expenses are covered by profits from cattle herd operations (first Brahman and later a pure Nguni), plus income from tourism operations. However donations on top greatly increase the scope and extent of possible capital development projects. A potential donation from IFAW was turned down by BGP because of the "strings attached" to the donation. BGP see no negative side to this donor support.

In the case of Hlane some land has recently been swapped for more new land. The sugar company that can now traverse the piece of the old park land pays an annual amount equivalent to half the saving in haulage costs because of being able to traverse the swapped land. This complements the revue being generated by game sales and tourism.

5.5 Private Sector Involvement

BGP is privately run, and the main rhino park is privately owned and managed.

6 PROPOSED PROJECTS

Projects identified or supported by BGP:

- Provision of external technical assistance to review and refine black rhino carrying capacity estimates and comment on stocking rates and carrying capacities of other browsers.

- Provision of scrambler bikes to enhance rapid reaction capabilities in the main rhino park (not strictly regional and possibly fundable through USF&W RTCF).
- Support for further development of Horn Fingerprinting to develop a useful forensic test to source recovered illegal horn.
- Financial support to enable the RESG to resume having meetings.

7 NATIONAL LEGISLATION AND POLICIES

The Game (Amendment) Act No 4 of 1991, and amendment of the Game Act of 1953 (Annex 5.6) and The Non-Bailable Offences Order No 14 of 1993.Act), and Annex 5.7. Black and White rhinos are specified as 'specially protected game' in the first schedule of the 1991 Act, and in the Game (Amendment) Order 12 of 1993.

7.1 Penalties

Penalties for those convicted of rhino crimes in Swaziland are severe, and translate into mandatory minimum jail terms five to seven years. If convicted, offenders face a mandatory jail sentence of five years within additional two years if they cannot refund the value of the animals approached as specified in the act. This penalty has been applied and appears to be acting as a deterrent. No rhinos have been poached in Swaziland since December 1992.

In horn dealing cases, those convicted are supposed to receive a mandatory sentence of seven years, but in practice is appears the five-year mandatory sentence has been applied. They have been about five or six horn trafficking cases and all concerned got five years. In one case a ten-year sentence was handed down with five years for horn and five years for ivory. The seriousness with which wildlife crimes are currently viewed is indicated by the recent sacking by the king of the traditional prime minister (one of the most powerful men in the country) for the poaching of three impala on a decreed rest day during a recent King's hunt. Swaziland has also passed a non-bailable offences act (Annex 5.7). The contravention of section 8 of the Game Act is treated along with murder, rape, robbery and contravention of sections of the arms and ammunition and pharmacy acts as a non-bailable offence. Thus if somebody is arrested for a rhino crime survey will not be granted bail.

7.2 Ownership of Rhinos

Information was not available on ownership or custodianship of rhinos. Effectively, the BGP are managing Swaziland's rhino on behalf of the King and Government, by Royal Warrant. The King may gazette areas for protection of game, including rhinos.

7.3 Hunting and live sales of rhinos

Safari hunting of rhinos is allowed by special permit. Trophies can be exported and imported with permit. There is no clause relating to live sales of rhinos in 1990 and 1993 legislation.

8 DATA SOURCES

8.1 Names, addresses and contact details of all informants/interviewees

Mr Ted Reilly
Head & AfRSG representative
The Kingdom of Swaziland's Big Game Parks
C/o Mlilwane Wildlife Sanctuary
+268 528 3944 or 416 1591 or 416 1675

Mr Mickey Reilly
Field Management & RMG Representative
The Kingdom of Swaziland's Big Game Parks
C/o Mkhaya Game Reserve
Box 311 Malkerns
Cell 09268 6040308
+268 416 1591 or 416 1675

Attempts to contact SNTC's Richard Boycott (09268 442 4241) by phone were unsuccessful on a number of occasions due to problems being experienced with international calls to Swaziland.

8.2 Documentation

There are no policy documents or reports available.

9 TRADE AND IMPORT/EXPORT OF LIVE RHINOS

9.1 CITES Management Authority

BGP are now the CITES authority.

9.2 Veterinary Controls

Information was not available.

9.3 Past Imports and Exports

Initially 6 black rhino were introduced from Zimbabwe in 1987 (donation) and more recently a further 6 animals from KwaZulu-Natal were introduced as part of a donation to the King of Swaziland paid for by the President of Taiwan.

10 HORN STOCKS

10.1 Control, Storage and Identification

Horns recovered from the field are locked up for safekeeping by BGP.

10.2 Involvement in AfRSG rhino horn fingerprinting project

Samples were supplied to AfRSG Project. BGP has been very supportive of project and supplying any additional samples that may be required. More black rhino samples are required.

ZAMBIA (Task 1.2 – 1.9)

Review by Drew Conybeare (Country visit: 21 – 25 August, 2000)

1 MECHANISMS FOR PLANNING AND COORDINATING NATIONAL RHINO CONSERVATION EFFORTS

1.1 Rhino Management Authority

The national rhino management authority is the Zambia Wildlife Authority (ZAWA). ZAWA is a Government authority set up to take over the responsibilities of the former National Parks and Wild Life Service. The transition is not yet complete and not all the new Directorate have yet been employed. There is an interim management team at present running the authority. ZAWA falls under the Ministry of Tourism.

1.2 National Rhino Strategy

There is no national rhino strategy at present. A document was drawn up about 8 years ago but was not endorsed by the responsible Ministry and has not been implemented. It is not clear whether this document was a national rhino strategy or a conservation plan. A copy could not be located while I was in Zambia.

1.3 Action Planning

There are no conservation action plans.

1.4 Coordination Mechanisms

There are no formalized planning structures within ZAWA set up specifically to deal with rhino conservation. The Research and Law Enforcement Divisions will be responsible for rhino conservation in the future (but see sec. 3.2)). An NGO, "Save the Rhino Trust" was an important body in the past and is still in existence.

1.5 Focal Point

Henry Mwima, Director of Operations and Research, was the previously designated contact person within ZAWA for the AfRSG and SADC Rhino Programme. Clement Mwale of the Law Enforcement Branch was previously the delegate to the RMG. George Kampamba, the new Head of Research, will now take all these responsibilities.

1.6 Potential for facilitation by SADC rhino programme

ZAWA would welcome assistance from SADC RPRC with updating the national rhino strategy.

2 EXISTING MECHANISMS FOR COLLABORATION WITH OTHER RANGE STATES
(Excluding SADC Rhino Programme)

2.1 Co-ordination with other range states

There is no formal collaboration with other range states except through the AfRSG and RMG. Informal contacts have been made in the past with Zimbabwean authorities and it is probable that ZAWA will look for more structured liaison with other countries in the future, especially Zimbabwe.

2.2 Existing commitments with other SADC range states

There is not now any documentation regarding previous commitments to cooperation with any other range states. However, the translocation of white rhino in the early 1960s from Umfolozi Game Reserve in South Africa must have involved some cooperation. (If pre-1964, this was to N. Rhodesia as Zambia became independent in 1964).

3 RHINO POPULATION STATUS

3.1 Summary Statistics on rhino numbers, distribution and trends

There is no official change from the report made to the SADC Rhino Programme Stakeholders Planning Workshop in March 2000. Although that report stated that there was a possibility that some individuals might remain in various parts of the country follow up investigations to some reported sightings have not revealed any rhino and there have been no reliable reports of sightings or other evidence of occurrence for some years. It would be realistic to assume that there are no black rhino left in Zambia.

There are 5 white rhino in the country, 3 males and 2 females held in Mosi-oa-Tunya National Park, Livingstone. Six animals, 2 males and 4 females were imported from a private source, Sable Ranch in South Africa in 1994. The details of this transaction are not clear but it may have been an exchange for sable. Two females have died and one male calf was born soon after their arrival. No calves have been conceived since the animals came to Zambia. It is possible that these rhino are all related.

One of the animals that died drowned in the Zambezi river in 1994 and the other did not recover from immobilisation after dehorning. Dehorning has been done twice and should be done again if this policy is to be continued (M. Faddy, pers. comm.). The records of these animals at the Head Office in Chilanga are probably not complete and more complete records may be available in Livingstone.

White rhino probably did not occur naturally in Zambia in historical times and the first introduction took place in the early 1960s. Four animals, two males and two pregnant females from Umfolozi Game Reserve in South Africa were introduced to Mosi-oa-Tunya National Park. The number increased to 13, but subsequently declined as a result of poaching and natural mortality. The last of these animals was killed by poachers in January 1989.

3.2 Population monitoring and reporting

The white rhino in Mosi-oa-Tunya National Park are confined within an electric fenced area of 11 km^2 and monitored daily. ZAWA intends to increase the size of the game fenced area. The last known poaching incident was in 1989. There is a need to investigate the reason for the absence of breeding in those animals.

3.3 Requirements for surveys and monitoring

Although ZAWA is prepared to accept that there are no black rhino in the wild there is some feeling outside ZAWA that it would be worthwhile to mount ground surveys in some areas, particularly in the eastern end of the Zambezi Valley where very broken country has never been properly surveyed for rhinos and patrolling is only of very low intensity (M. Faddy, pers. comm.).

Lavushi-Manda Game Reserve was also suggested as another possibility (H. Jachmann, pers.comm.).

4 MANPOWER AND OTHER RESOURCES FOR RHINO CONSERVATION

4.1 Anti-poaching resources

It is difficult at this stage to determine the number of Scouts on an area basis as the transition from the former National Parks and Wildlife Service to ZAWA is not yet complete. Staff establishment is allocated on a Regional basis with some flexibility in distribution of staff to Stations within the Region. Proposed staff establishments for South Luangwa Area Management Unit, Bangweulu Area Management Unit (which includes North Luangwa NP), Lower Zambezi Area Management Unit and Mosi-oa-Tunya Area Management Unit were provided by the reviewer.

For Mosi-oa-Tunya NP a breakdown for stations indicates a total of 8 Scouts (proposed) for the National Park, which includes the fenced Game Area where the white rhino are held. There are 4 Scouts allocated to protection of and monitoring the 5 white rhino and also 1 4WD vehicle donated by the Save the Rhino Trust.

There are no formal budgets available for 2000 and those for 2001 are in preparation. Salary scales for all posts have also not yet been finalised but proposed starting salaries for the lower grades are

available (Table 1). These salary levels are far higher than the salaries for equivalent posts in the previous National Parks Service.

Table 1. Proposed starting salaries for some grades in ZAWA
USD1:ZK3300 (August 2000)

Grade	Annual starting salary	
	ZK	USD
Wildlife Scout	5,4m	1636
Senior Scout	9,0m	2727
Ranger	27,0m	8182

4.2 Expertise available for specialised aspects of rhino management

There is little availability of expertise for specialized aspects of rhino management at present. There are posts for two veterinarians in the new ZAWA structure and one has been appointed. There is a Research Division with ecologists available for monitoring.

4.3 Specialised equipment available for rhino management

There is no specialised rhino management equipment available within ZAWA for rhino capture and translocation.

5 PARTICIPATION OF NON-STATE AGENCIES IN RHINO CONSERVATION

5.1 Community Involvement

There are no formal measures at present for direct community involvement in rhino conservation. Such measures would need to be incorporated in the National Strategy. The present community involvement in wildlife conservation/utilisation is through the programme for the Administrative Management Design for Game Management Areas (ADMADE), which operates outside National Parks and Game Reserves, whereas any rhino reintroductions would be likely to take place into National Parks.

5.2 Local and International NGO Involvement

Save the Rhino Trust, a local NGO is the only NGO directly involved with rhino conservation. SRT has done no fund raising for about 10 years and has had no direct involvement in wildlife management for about 14 years since the inception of the Luangwa Integrated Rural Development Programme (LIRDP). It does still however supply money to NPWS (ZAWA) on request and has supported measures to combat commercial poaching. It supplied the 4WD vehicle to assist the management of the white rhino in Mosi-oa-tunya NP. Without further fund raising the Trust would be able to contribute about USD10,000 p.a. to rhino management.

Other international NGOs contribute towards wildlife conservation in general e.g. NORAD in South Luangwa and Frankfurt Zoological Society in North Luangwa.

There are a number of other NGOs that support conservation in Zambia:
Wildlife, Environmental Conservation Society of Zambia;
Conservation Lower Zambezi;
Environmental Council of Zambia through the Wildlife Monitoring Unit, funded by the Netherlands Government.

5.3 Private Sector Involvement

The private sector can become directly involved in the form of Honorary Rangers.

6 PROPOSED PROJECTS

Sanctuary establishment and relocation of the Black rhino in Zambia

This project proposal was submitted to the AfRSG in 1996 (Mwima 1996). Objectives of the project were to:

i. Determine the present numbers of the Black rhino and distribution in Zambia using scientifically based research and monitoring;
ii. Establish sanctuaries to ensure long-term existence of the Black rhino;
iii. Translocate Black rhino to sanctuaries and establish an effective management programme.

This project proposal will require complete revision.

There is a possibility that the reintroduction of Black rhino is being considered into North Luangwa National Park where there is a Frankfurt Zoological Society funded rehabilitation project, but there has been no official approach to ZAWA.

I don't think that the position of wildlife conservation in Zambia is yet stable enough to warrant reintroduction of Black rhino. This view was supported by M. Faddy and H. Jachmann.

Upgrade of monitoring of white rhinos at Mosi-oa-Tunya

A programme to formalise the white rhino monitoring at Mosi-oa-Tunya is planned (G. Kampamba, pers. comm.). Given the lack of breeding in this small group, a review of the project, suitability of habitat, size of the sanctuary, etc is required.

Two further proposals were added to the country review:

Evaluation of feasibility of reintroduction of black rhinos to North Luangwa NP
(Requested by FZS)

Although not yet formally endorsed by ZAWA, this project would assess the North Luangwa NP as a potential area for re-introduction of black rhinos to Zambia. The project managers of FZS have already provided a considerable amount of background material, vegetation studies, etc on this area and its potential. This project would involve a detailed assessment of the suitability of the area using standardised biological and non-biological criteria (past rhino densities, present habitat suitability, existing threats, law enforcement and management capacity, sustainability, etc)

Assessment of potential areas and options for re-introduction of black rhinos to Zambia
(Suggested by the SADC Programme Co-ordinator)

This concept proposal would examine the wider opportunities for re-establishing a population of black rhinos in Zambia, initially considering all protected areas within past distribution/range of black rhinos, and particularly those with very large populations (i.e. more than 1,000 animals). The Luangwa NP (North and South) and Kafue NP would be candidate areas for examination. This exercise would be worthwhile prior or parallel to a detailed feasibility study focused on North Luangwa NP (above), at least to cover all options within the country, and in particular to look at the biological criteria across the Zambia PA's in advance of assessing suitability with regard to the management and protection capacity and potential of different areas.

7 NATIONAL LEGISLATION AND POLICIES

The primary legislation is the Zambia Wildlife Act (No. 12 of 1998) and there is also a Policy for National Parks and Wildlife in Zambia, dated 1998. Pertinent sections of the Zambia Wildlife Act are found in Annex 6.1. The Policy for National Parks and Wildlife in Zambia is found in Annex 6.2.

7.1 Penalties

There are penalties for offences involving elephant and rhinoceros are laid down in section 133 of the Act:

i. for a first offence, to a term of imprisonment of not less than 5 years but not exceeding 20 years without the option of a fine; and,

ii. for a second or subsequent offence, to a term of imprisonment of not less than 7 years but not exceeding 25 years without the option of a fine.

If the offence involved illegal trafficking in ivory or rhinoceros horn the penalties are:

i. for a first offence, imprisonment for not less than 7 years but not more than 20 years without the option of a fine; and,

ii. for a second offence, imprisonment for not less than 10 years but not more than 25 years without the option of a fine.

7.2 Ownership of Rhinos

Ownership of wild animals in Zambia is vested in the President. However, where an animal has been captured lawfully in terms of a licence, ownership is vested in the licensee. A landowner has the right of use of animals on his land. This would appear to allow private ownership of rhino but would probably need to be clarified in a specific policy document. Mr Kampamba indicated that assistance from the SADCRCP could be sought to assist with formulating such a policy.

8 DATA SOURCES

8.1 Names, addresses and contact details of all informants/interviewees

Mr H.K. Mwima, ZAWA, Director of Operations and Research, Anglo-American Building, 74 Independence Avenue, Lusaka. Tel. 260-1-255776; Cell 097-774061. rhkmwima@mail.zamnet.zm

Mr G. Kampamba, ZAWA, Head of Research, P.Bag 1, Chilanga, Zambia. Tel. 260-1-278323; Fax. 278439; Cell. 097-774057.

Mr W. Chisulo, ZAWA, Finance Manager, Anglo-American Building, 74 Independence Avenue, Lusaka. Tel. 260-1-255776.

Mr J. Kasanga, Interim Director, Human Resources at ZAWA. Independent Management Consulting Services (IMCS), P.O. Box 30997, Lusaka. Tel. 227889

Mr C. Wakung'uma, IMCS consultant

Mr M. Faddy, Save the Rhino Trust, P.O. Box 30106, Lusaka. Tel: 260-1-225976. Fax: 260-1-226736. chinzsaf@zamnet.zm

Dr H. Jachmann, Environmental Council of Zambia, Wildlife Monitoring Unit. Tel. 260-1-254130

8.2 Documentation

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9 TRADE AND IMPORT/EXPORT OF LIVE RHINOS

9.1 CITES Management Authority

ZAWA is the CITES Management Authority and any import or export would require standard CITES documentation.

9.2 Veterinary Controls

Veterinary requirements are not certain but would certainly require quarantine and inspection in the country of origin for imports and quarantine and inspection in Zambia. The presence of Veterinary Officers in ZAWA should facilitate the procedures.

9.3 Past Imports and Exports

Full details of previous importations were not available, but have been:

i. Five white rhino from South Africa in the early 1960s to Mosi-oa-Tunya Park at Livingstone. All these animals and their offspring died.

ii. 6 white rhino in 1994 from South Africa to Mosi-oa-Tunya National Park at Livingstone. These were from a private land source, Sable Ranch and were probably on an exchange basis.

No live rhino have been exported from Zambia.

10 HORN STOCKS

10.1 Control, Storage and Identification

Rhino horn is held in a strong room together with ivory at the old National Parks Headquarters at Chilanga, 15km south of Lusaka.

The horns have a serial number punched into the horn and are recorded on a register which also gives the weight. Existing records do not give the source of the horn, e.g. horns cannot be identified as having come from Luangwa or Kafue.

According to Mr Kampamba there are 24 full horns with a mass of 17 kg, and 6 pieces with a mass of 2,5kg, in the strong room at Chilanga.

10.2 Involvement in AfRSG rhino horn fingerprinting project

There has been no involvement in the FP project to date.

MOZAMBIQUE (Task 1.2 – 1.10)

Review by Rob Brett (Programme Co-ordinator) (Country visit with Giuseppe Daconto (CESVI): 19 – 22 September, 2000)

1 MECHANISMS FOR PLANNING AND COORDINATING NATIONAL RHINO CONSERVATION EFFORTS

1.1 Rhino Management Authority

The rhino management authority is the *Direcção Nacional de Florestas e Fauna Bravia* (DNFFB), which currently sits under the Ministry of Agriculture.

1.2 National Rhino Strategy

There is no formal rhino conservation strategy document.

1.3 Action Planning

There is no action plan for rhino conservation in Mozambique.

1.4 Coordination Mechanisms

There is no formal committee or structure for planning rhino conservation in Mozambique.

1.5 Focal Point

Following requests, both in an initial letter from SADC WSTCU requesting assistance with this country review, and during the country review itself (to the DNFFB National Director, Mr Cuco), DNFFB have notified the SADC WSTCU that Mrs Felismina Longamane Langa will be the focal point for the SADC rhino conservation programme.

1.6 Potential for facilitation by SADC rhino programme

Although this was not requested by any DNFFB representatives interviewed during the country visit, there is potential for facilitation or assistance by the SADC RPRC for DNFFB to produce a strategy document. Given the uncertainty about the presence of any rhinos in Mozambique, the development of any agreed framework for rhino conservation in the country will probably have to wait until presence of rhinos has been confirmed and follow-up surveys have been carried out. The appointment of a single person to act as focal point for any assistance from the programme would be a very useful first step, particularly for gathering compiling information on reports of rhino remaining in the country, co-ordinating follow-up activities (surveys and monitoring, etc), and monitoring information on rhino horn trade.

2 EXISTING MECHANISMS FOR COLLABORATION WITH OTHER RANGE STATES (Excluding SADC Rhino Programme)

2.1 Co-ordination with other range states

There are a number of existing trans-frontier conservation initiatives involving Mozambique and its neighbours, including South Africa, Zimbabwe and Tanzania, although none have any specific focus on rhino conservation. Nevertheless, the future development of conservation areas on the borders of Mozambique has major implications for rhino conservation, particularly where there is potential for rhinos to be protected within a larger area of suitable habitat within a TFCA (e.g. Kruger NP/Coutada 16).

Before independence, there was formal co-operation with South African wildlife authorities. In 1969, Natal Parks Board moved 71 white rhinos from Umfolozi GR to Maputo Special Reserve, and 12 to Gorongoza NP (all subsequently killed during the civil war in Mozambique, and during the presence of SADF, particularly in Maputo SR). More recently, existing co-operation on rhino conservation between SANP, the Malawi DNPW, and Mozambique DNFFB was proposed (A Hall-Martin), involving the possible capture of remaining black rhinos from Mozambique and their translocation to Liwonde sanctuary in Malawi to increase the genetic diversity of that population. The ultimate intention was to

move surplus rhinos from Liwonde back to a protected area in Mozambique, and to Kruger NP. It is not clear whether there was any formal communication with Mozambique over this proposed plan, and these plans have had no result.

The Catuane project (TFCA) on the southern border of Mozambique with South Africa involves co-operation with KZNW (Ndumo GR), and there are presumably rhino and law enforcement-related links between DNFFB and KZNW, particularly when (or if) rhinos stray from South Africa into Mozambique. Finally, the Endangered Species Protection Unit (ESPU) of the South African Police carried out a survey of Mozambique (available through TRAFFIC SA), although it is not clear what degree of co-operation this work had with DNFFB.

2.2 Existing commitments with other SADC range states

Beyond the present TFCA programmes with South Africa and Mozambique, there are not believed to be any commitments with other SADC rhino range states (e.g. to transfer rhinos, or undertake joint law-enforcement).

3 RHINO POPULATION STATUS

3.1 Summary Statistics on rhino numbers, distribution and trends

Indications of presence of rhinos in Mozambique persist in the form of reports of sightings or sign of rhinos from three areas in the past 12 months (Niassa GR, Tete Province, Gaza Province (Coutada 16)), and possibly from two others (Zinave NP, Gile GR). The information is insufficient to make any estimate of numbers of rhinos, and in general the reports of rhinos have not been followed up or confirmed.

In **Niassa GR**, sign of rhino has been reported by the reserve warden, Baldeu Chande, and one of the concession holders in one of the areas bordering the reserve. In **Tete** province, rhinos have been sighted south of Cahora Bassa Dam (Luis Namanha, pers comm.) close to the border with Zimbabwe. In **Gaza** province, arrests have been made of poachers and rhino horns seized (see 10 (a)). It is not clear whether these were from rhino killed in Coutada 16 or from within Kruger NP. Finally an unconfirmed report was recently received (September 2000) of rhino sign in Zinave NP (on the south side of the Zambezi), and unspecified rhino reports were said to have come from Gile GR.

Reports of rhinos in Niassa GR have been available since 1995, when a ground survey provided evidence of several animals remaining (O'Connor & McKay 1997: estimated of between 10-50 animals: E Bolton). A rhino was sighted from a helicopter and photographed in Niassa GR in 1996 (Madal/Ian Craig). The most recent surveys for rhinos in Mozambique (Tete: WWF 1998, Gile GR: Chande/Zolho 1995/96) have failed to locate any rhinos. Although there may be black rhinos remaining in Mozambique (with Niassa GR the most likely area for following up reports with surveys) *it seems certain that there are no viable breeding populations of rhinos* (black or white) *remaining in Mozambique* (Anstey 2000).

3.2 Population monitoring and reporting

There are presently little or no rhino monitoring activities within DNFFB, and information on rhinos such as there is comes from isolated reports from villagers, hunters and/or scouts (e.g. Niassa GR). Consequently there is no useful information for status reporting or planning for rhino conservation activities. It is, however, encouraging that there have been recent reports of rhinos, and that arrests have been made and horns recovered (10 (a)). Communications between the remote areas where rhinos have been reported have been sufficient for these reports to be compiled by DNFFB for the SADC range states meeting held in March 2000 (Mozambique country report: Mahanjane, S B & Longamane, F).

3.3 Requirements for surveys and monitoring

Surveys and follow-up monitoring/surveillance of rhinos are required in all areas of Mozambique from where plausible reports of rhinos still come in, with Niassa GR probably the area with best prospects for a successful survey to be followed up with some form of improved surveillance and protection for animals located. However, the planning and implementation of surveys need to be based on confirmed reports or evidence of a rhino sighting or rhino spoor or sign (e.g. rhino dung, photograph of rhino midden or spoor). Such evidence has not been forthcoming in the past 24 months, and would be

an essential prerequisite to committing the resources needed for surveying rhinos in remote areas. If reports of rhinos are also being received consistently over time from a relatively small area (e.g. < 500 km^2), there will also be good reason for follow-up with a more detailed survey. As was the procedure for the 1998 Tete exercise, surveys must be timed for dry season periods when water points are most limited. Ground surveys must be based on preliminary aerial reconnaissance to establish the location and distribution of water points and other areas likely to harbour rhinos. These can then be examined subsequently with more intensity.

The first measures necessary are:

- to improve the lines of communication between areas from which rhino reports are received, and a focal point/information officer in DNFFB and/or representatives in the provinces (e.g. SPFFB, private sector).
- to thereby obtain confirmation of the presence of rhinos from these areas with follow-up visits by persons able to confirm rhino spoor or sign.
- to plan subsequent survey and surveillance operation based on accumulated evidence from reports consistently received from individual areas.

The lack of information is a definite constraint to development of any strategy for plan for rhinos in Mozambique, and the SADC rhino programme is well placed to assist with support and/or co-ordination of survey and monitoring activities, including necessary training and equipment for field staff *in situ*.

4 MANPOWER AND OTHER RESOURCES FOR RHINO CONSERVATION

4.1 Anti-poaching resources

At present, there is probably inadequate manpower and capacity within DNFFB for protection of rhinos in any area of Mozambique.

Information on operating budgets for protected areas was not available. Detailed information on scout salaries was not forthcoming, but are less than 50 US$ per month (US$ 600 p a). Scouts in the Niassa GR are paid 700,000 Mt p m (ca. 45 US$), plus rations.

Numbers of scouts deployed by protected area are shown below:

Area	Type	Size	Scouts	km^2/Scout
Zinave NP	S	4207	25	168
Maputo GR	S	876	40	22
Gorongoza NP	S	5204	45	115
Niassa GR	S	>25000	65	>380
Coutada 16	S	11116	10	1112

4.2 Expertise available for specialised aspects of rhino management

There are several qualified wildlife veterinarians in Mozambique (Carlos Lopes Pereira, Samero Magane, Bartolomeo Soto, Samuel Bila (trained at Kruger NP on a course financed by FNP)), although the extent of their experience with rhino capture and translocation is probably very limited or nil. Some DNFFB staff at medium-level have received training in wildlife management at the SAWC and Mweka College (Tanzania). Otherwise there is probably no rhino-specific expertise available in Mozambique.

4.3 Specialised equipment available for rhino management

There is no specialist equipment available in Mozambique for rhino management, including capture equipment or vehicles.

5 PARTICIPATION OF NON-STATE AGENCIES IN RHINO CONSERVATION

5.1 Community Involvement

There are several initiatives and existing projects for community involvement in wildlife conservation, but none have a specific rhino component (yet). These include:

- Tchuma Tchatu Programme, DPAP, Tete Province: direct benefits to community from wildlife
- Catuane Project (FNP): training
- SGDRN (Niassa Development Society): partnership between DNFFB, private sector (Madal), and communities for management of Niassa GR and surrounding blocks and community use zones

The future development of proposed TFCA areas that already have rhino populations (e.g. Kruger NP, Coutada 16) will necessarily have substantial community participation, and will probably depend on such. Future zoning of these areas for community and private sector involvement will have major implications for the opportunities for rhino conservation, particularly with regard to the requirement for fencing in areas of Mozambique adjoining Kruger NP (Coutada 16, Mapulanguene). The possible involvement of Italian Aid in the GKG TFCA through a project for a buffer area in Gaza province, presently under discussion, may provide additional facilitation in the future.

5.2 Local and International NGO Involvement

WWF (SARPO) has had recent specific involvement in rhino surveys in Tete province (WWF 1998), and is presently advising on the development of a management plan for Niassa GR. USFWS, Tusk Trust, and the Disney Corporation have contributed support to the SGDRN (Niassa Development Society): for running the Niassa GR (including law enforcement activities). Apart from the historical assistance to Maputo Game Reserve, there is no other specific NGO assistance to rhino conservation in Mozambique.

5.3 Private Sector Involvement

Grupo Madal is one of the constituents of the SGDRN (Niassa Development Society), which has an obligation of a minimum annual investment to Niassa GR. SGDRN manages the Niassa GR, including the provision of ground patrols and law enforcement in areas that are still believed to harbour black rhinos.

A recent study (Dinson 2000) of the Mapulanguene area (adjoining eastern boundary of Kruger NP, south of Coutada 16) has outlined potential zoning, wildlife stocking and ecotourism development within and around a core area of ca. 8,500 km^2, presently inhabited by an estimated 20,000 people. Estimates for eventual wildlife stocking include 931 black rhinos and 1,150 white rhinos. A lodge concession in the area (Sabi Nzonguene) has already been approved by the Mozambique Council of Ministers.

6 PROPOSED PROJECTS

Rhino Surveys in Niassa GR

SADC RPRC Activities: 2.1, 4.1
Lead agency: WWF
Collaborating agencies: SGDRN, DNFFB
Possible Timing: Semester 4

Given confirmation of the presence of rhinos within and/or bordering Niassa GR, a series of surveys will be carried out, initially using aerial reconnaissance to select target areas, followed by systematic foot patrols to locate rhinos and determine approximate numbers and range. Expertise for the surveys would be provided, including on-the-job training of DNFFB scouts by imported trackers, follow-up for continuous surveillance of any rhinos located, and development of plans for security and management of Niassa rhinos. Surveys and follow-up would be planned to preclude security risk to any rhinos as a results of these same activities (i.e. making any rhinos located more vulnerable to poaching). This exercise could be extended to other areas where reports of rhinos in Mozambique still emerge.

Support for Focal Point/Rhino Information Officer in DNFFB

SADC RPRC Activities: 2.1, 4.1
Lead agency: DNFFB
Collaborating agencies: IUCN
Possible Timing: Semester 3

This project would facilitate the appointment of a focal point for the SADC rhino programme, and support his/her activities with technical input for an 'information officer' activities:

- establishing good communications with areas from which rhino reports continue to originate in Mozambique
- planning follow-up actions following initial reports, particularly confirmation and verification of rhino presence.
- co-ordinating subsequent survey and monitoring activities

Planning for rhino conservation in TFCA area(s)

SADC RPRC Activities: 4.1, 4.2, 5.2
Lead agency: MET, NP PRU
Collaborating agencies: KZNW, SADC Rhino Management Authorities on request
Possible Timing: Semester 3

With current development of TFCA areas on the borders of South Africa and Mozambique (Kruger NP/Coutada 16/Mapulanguene), there is considerable potential for including rhino conservation areas within Mozambique included (e.g. Coutada 16, Mapulanguene), and adjoining Kruger NP. This project would extend existing facilitation provided by IUCN/SADC in the TFCA process with present donors (WB, KfW) to include planning for rhino conservation areas within future land use and management plans (KFW 2000). This would ensure that as agreements are reached on the development of these areas (control, zoning, participation, fencing, timing), protection and management of rhinos is still possible over areas with sufficient capacity to develop large viable populations of black and white rhinos within Mozambique, and extending from existing range within Kruger NP. The possible involvement of Italian Aid in the GKG TFCA through a project for a buffer area in Gaza province, presently under discussion, may provide additional facilitation in the future.

7 NATIONAL LEGISLATION AND POLICIES

Mozambique has a complex suite of legislation including sections relevant to rhino conservation, some of it old and outdated, but much in the process of revision. The context for rhino conservation is also complicated by the possibility of removal of some or all protected areas (e.g. selected National Parks with tourism value) to come under the Ministry of Tourism. Further, responsibility for co-ordinating environmental issues, including environmental law, presently falls under the Ministry of Environment.

The detailed **wildlife legislation** still operating is the hunting law dating from colonial times (EdeM 1955). This law covers hunting, protected areas (NPs), hunting areas (e.g. Coutadas) and regulations, and also lists of protected species (Mapa V, p 63), including black and white rhinos, and their (1955) value. The list of protected species (including black and white rhinos), and their value, was updated after independence (RdeM 1978). The existing protected areas are all described in the 1995 law; in some cases the reasons for their creation no longer exist, and their justification may no longer be valid. The system of Protected Areas in Mozambique is in need to revision to reflect this reality, and could involve the shedding of some Pas, the incorporation of other areas of great value that currently have no protected status, with some trade-off between the two.

The **land legislation** has been recently revised (RdeM 1997), and defines all aspects of land tenure. All land belongs to the state. However, land tenure can be secured after 10 years of occupancy *in good faith*, but this does not apply to Total Protection Areas (NPs, etc). There is a Biodiversity Strategy & Action Plan (1987), produced by the Ministry of Environment, which identifies a few places for special status, but has no framework for implementation. There is no provision for large mammals, or 'flagship' species. With the exception of elephants (DNFFB 2000), there are no strategies for individual species. Mozambique is a signatory to the African Convention on Conservation of Nature and Natural Resources (1981), and to CITES (1981).

7.1 Penalties

Recently, a new Forestry and Wildlife Law (RdeM 1999) has come into effect, which is framework legislation, still relying on the details of the old hunting law (EdeM 1955) for operation (Annex 7.1). However, it specifies offences (Article 41) including one for "*committing acts that perturb or disturb wildlife"* (1.(a)), which is punishable by a fine between Mt 2,000,000 (ca. US$ 120) and Mt 100,000,000 (ca. US$ 6000). "*If the offence committed involves a rare plant and animal species, or those threatened by extinction as well as any others whose exploitation is forbidden"* (which presumably includes both rhino species), *"then the fine applied shall be 10 times the maximum value provided for in this article"*. A fine of Mt 1,000,000,000 (ca. US$60,000) is clearly warranted for offences involving rhinos (including disturbing, unlicensed import or export, illegal hunting). There are additional *aggravations* (increased penalties, e.g. if a scout commits an infraction). The offences covered and penalties provided by this legislation are all *infractions*, rather than crimes; they are not brought to court, and no custodial sentence is prescribed, except in cases of failure to pay the fine (when the infraction becomes a crime). There is no provision in the 1978 revision for offences for possession of rhino horn.

7.2 Ownership of Rhinos

Ownership of game is covered by the new framework law (RdeM 1999: Annex 7.1). If game is re-introduced to a game farm or concessions area, it can be privately owned. Otherwise, all game is owned by the government of Mozambique. Article 29 deals with restocking of wildlife, and states that "*anyone who causes the decline of wildlife shall be required to restock the affected species according to terms and conditions to be determined by a special decree"*.

8 DATA SOURCES

8.1 Names, addresses and contact details of all informants/interviewees

Arlito Cuco, Director Nacional, Direcção Nacional de Florestas e Fauna Bravia (DNFFB), Ministério da Agricultura e Desenvolvimento Rural, Praca do Herois Mocambicanos, C.P. 1406, Maputo. acuco@dnffb.imoz.com

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Nigel Pollard, Special Projects, Grupo Madal, P O Box 1232, Maputo.

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WWF (1998) Search for Black Rhinos in Tete Province, Mozambique (N Monks, survey team leader). WWF SARPO.

9 TRADE AND IMPORT/EXPORT OF LIVE RHINOS

9.1 CITES Management Authority

DNFFB is the CITES management authority, and the representative is S B Mahanjane. All licensing is done through National Director, DNFFB, including the import and export of live animals.

9.2 Veterinary Controls

For the import and export of live animals, licences from the National Directorate of Animal Production (Veterinary Services) are required.

9.3 Past Imports and Exports

The only rhinos known to have been translocated to (or from) Mozambique were the large batch of white rhinos moved to Maputo GR and Gorongoza NP from Umfolozi GR in the late 1960s.

Year	Source	Destination	No	Transaction
1969	Umfolozi GR	Maputo Game Reserve	71	Donation
1969	Umfolozi GR	Gorongoza NP	12	Donation

10 HORN STOCKS

10.1 Control, Storage and Identification

Black and White rhinos are on CITES Appendix I for Mozambique. DNFFB is responsible for control and storage of rhino horn, but horn is stored at a provincial level. Identification codes for rhino horns are provided from central government, and surveys are conducted from Maputo on provincial stock.

Horn is stored in the Maputo strong room (believed to be on Floor 16 of the Department of Agriculture). There is currently only one pair of rhino horns in stock: seized during arrests this year (2000) from poachers operating in Coutada 16 or possibly Kruger NP (RSA). These horns were inspected, and appeared to have come from an adult male black rhinoceros.

10.2 Involvement in AfRSG rhino horn fingerprinting project

There has been no involvement. Until recently DNFFB did not have any horn in stock to provide samples from. However, samples from the horn seized could be excellent material for testing for possible source area, particularly as Kruger NP has been sampled. In addition, the present fingerprinting method has been validated to confirm whether horn tested comes from black or white rhino.

TANZANIA (Task 1.2 – 1.11)

Review by Richard Emslie (AfRSG) (Country visit with Raoul du Toit (WWF SARPO) and Martin Brooks (AfRSG): June 2000)

INTRODUCTION

Two black rhino subspecies occur in Tanzania. Small populations of the eastern black rhino, *Diceros bicornis michaeli*, are conserved in Ngorongoro CAA, the Serengeti NP (Moru Kopies and northern Serengeti NP) and Mkomazi Game Reserve, while the south-central black rhino, *D.b.minor* is restricted to areas within the Selous Game Reserve. The eastern black rhino is currently excluded from the SADC Rhino Programme and so this SADC range State review concentrates on the remaining *D.b.minor* in the Selous GR.

1 MECHANISMS FOR PLANNING AND COORDINATING NATIONAL RHINO CONSERVATION EFFORTS

1.1 Rhino Management Authority

There are three main management agencies responsible for black rhino in Tanzania. Only one agency (Tanzanian Wildlife Division) has responsibility for the *D.b.minor* in the country.

- TANAPA – Tanzania National Parks: Serengeti National Park (Moru Kopjes and northern Serengeti NP)
- Wildlife Division, Ministry of Natural Resources & Tourism: Mkomazi GR, Selous GR. This is the only authority currently managing *D.b.minor* in Tanzania
- Ngorongoro Conservation Area Authority: Ngorongoro.

1.2 National Rhino Strategy

The first National Plan was completed in 1993, following a stakeholder's workshop convened at Arusha. There were problems with implementation of the first plan. Despite funding having been secured, it took a long period before the first rhino co-ordinator (Max Morgan-Davies) was appointed. As Morgan-Davies worked under WWF and other donors were funding other elements of the programme, there were problems with co-ordination of a national rhino programme. Despite Morgan-Davies' Terms of Reference as National Co-ordinator, some regarded him only as a rhino co-ordinator for the Wildlife Division, and this view was perhaps reinforced by the fact that most of Morgan-Davies' field work was based in the Selous GR.

A revised and updated National Plan was drafted in 1998, following a workshop convened at Morogoro (Annex 8.1). This plan was a great improvement upon the initial plan, but unfortunately still has to be officially endorsed by being signed by the minister. All stakeholders, including all three management agencies and the main sponsors, were represented at Morogoro, including outside technical expertise. Unfortunately there has been some inertia since then.

The 1998 National Plan clearly needs ratification and use as a guide for planning future conservation actions. At the timing of writing, the document is with the heads of the three rhino management authorities for review. After drafting, the then Tanzanian rhino co-ordinator Max Morgan-Davies passed it to the Director of Wildlife, who then passed it to the Ministry. At that time, Mr Emmanuel Severre (then Permanent Secretary in the Ministry) forwarded the plan to the heads of all relevant bodies (listed above). Mr Severre has since been appointed Director of Wildlife and is awaiting comments back from heads of the other two agencies (TANAPA and NCAA), on reception of which the plan can be passed to the Minister for signature. There has also been a change in Director-General of TANAPA (now Mr Melamari). In order to expedite the process, it was suggested that Mr Severre could write to the heads of the two other agencies to state that if no comments have been received by a certain date he would assume their no objection. Tanzania is in a similar position to South Africa with a number of state rhino management authorities. However it is critical that the revised plan is formally endorsed as soon as possible.

1.3 Action Planning

The revised Policy and Management Plan for the black rhinoceros, *Diceros bicornis,* in Tanzania (Annex 8.1) contains specific indicators of progress, and specifies some timings for actions. As described above, the one impediment is that the revised plan still has to be formally ratified by the Minister.

1.4 Coordination Mechanisms

The major highest-level committee is the Rhino Conservation Steering Committee, made up of the heads of TANAPA, the Wildlife Division, the NCAA, and the head of Tanzanian Wildlife Research Institute (TAWIRA). This committee has not yet convened.

The action committee is the Rhino Management Committee, of which Mr Maige, as rhino co-ordinator, is Chairman. It is comprised of the technical co-ordinator for Selous (Friedrich Alpers, once appointed as Kidai technical advisor), plus Mr Melita (Acting Chief Manager, Management of Natural Resources, NCAA), the Serengeti Sector Warden, Mr Msumi (for Moru Kopjes), and possibly Mr Jacko Ackermann (northern Serengeti NP). Further details of the structure and function of the coordinating and management committees can be found in Annex 8.1.

Mr Maige has convened one meeting so far of Rhino Management Committee, to decide on 1999-2000 annual budget/workplan. The committee has not yet discussed standardized reporting procedures. To date it has only prioritised activities, and developed a rough idea of budgets to forward to the agencies that are funding rhino conservation at each site. In the absence of meetings of the RCSC, the RMC has therefore acted as the only planning body. The current action plan ends in June 2000 (the Wildlife Division have July-June financial year), and a plan must soon be developed for 2000-2001.

1.5 Focal Point

Mr Matthew Maige is the Tanzanian Rhino Co-ordinator, and is based at the Wildlife Division in Dar-es-Salaam. He is also the Tanzanian Country Representative on the AfRSG, and, although not formally confirmed as Tanzanian SADC representative, he represented Tanzania at the SADC Range States meeting. He is likely to be nominated by the Director of Wildlife to be the official SADC rhino representative for Tanzania.

1.6 Potential for facilitation by SADC rhino programme

In order to expedite progress with action planning and implementation, both the SADC Rhino Co-ordinator and the Chairman of IUCN SSC AfRSG could write to Mr Maige, Mr Severre, Mr Melamari, Mr Chausi, and possibly the Minister, encouraging Tanzania to formally ratify the 1998 rhino conservation plan.

2 EXISTING MECHANISMS FOR COLLABORATION WITH OTHER RANGE STATES
(Excluding SADC Rhino Programme)

2.1 Co-ordination with other range states

The movement of rhinos in and out of Tanzania has so far been restricted to *D.b.michaeli.* The agreement with South Africa for this rhino subspecies is informal. Plans of the FZS (e.g. for sending zoo rhinos to SA) are also informal. Four black rhino have so far been introduced to Mkomazi GR, and 2 black rhino were introduced (successfully) to the Ngorongoro Crater. All six animals came from Addo NP in South Africa. The orphaned bull "Richard" from Ngorongoro was moved to Addo NP to add new blood. More translocations of *D.b.michaeli* are planned to Mkomazi GR from Addo NP in 2000. NCCA have "declined" more translocations into Ngorongoro Crater. NCAA staff suggest that Addo NP rhinos are not used to predators, and so they stay in forest where they are difficult to monitor. Kenya has informally been approached as a possible source of more rhinos, and Tanzania is trying to formalize with KWS for some transfers of rhinos. One individual *D.b.minor* has been sent to South Africa by Frankfurt Zoo (from Zimbabwe parents) – and another is going to be sent in future.

Tanzania is a "very active" member of Lusaka Protocol – but not much has resulted from it since its task force is not fully operational, as all countries have not yet ratified the protocol. Tanzania feels that it is paying its dues but "are the greatest losers" because they are getting little or nothing in return. They are hoping that the SADC Wildlife Protocol will become the umbrella agreement in force (although this would exclude Kenya). There is no formal agreement with Mozambique, although there is some cross-border law enforcement.

2.2 Existing commitments with other SADC range states

There is an agreement in place to catch 50 Niassa wildebeest for Malawi, and this was concluded between the respective presidents of Malawi and Tanzania. The animals were to be caught in the Selous GR by SANP, who had indicated to the Tanzanian Wildlife Division and Tanzanian Rhino Co-ordinator that while they were in the Selous GR they would be prepared to assist rhino conservation efforts in the reserve through provision of some helicopter time and possibly loan of experienced trackers who could undertake some patrolling in the Lukuliro area. The proposed capture of the wildebeest has been postponed in order to formalise the agreement between the presidents on paper. As a result, any possible assistance from SANP has had to be postponed to next year (2001).

3 RHINO POPULATION STATUS

3.1 Summary Statistics on rhino numbers, distribution and trends

TANZANIA *(3 subspecies)*		AREA	RC/PE	PR	SG	TOT	TREND	DENS	
(D.b. michaeli)									
Mkomazi Game Reserve	Sp	45 km^2	4			4	Stable	0.089	
Serengeti NP	S	14 763 km^2							
- Area 1			3			3	Down?		
- Area 2			7		(2)	7	Up		
Ngorongoro Conservation Area	S	8 288 km^2	18		**(2)**	18	Up		
		23 096 km^2	**32**		(2)	**32**	**Up**		
(Subtotal D.b. michaeli)									
(D.b. minor)							Stable?		
Selous Game Reserve	S	55 000 km^2	6		(1)	6	?		
- Area 1				9	(6+)	9	?		
- Area 2			**6**	**9**	**(7+)**	**15**	**?**		
(Subtotal D.b. minor)		**55 000 km^2**	**38**	**9**	**(9+)**	**47**	**Up?**		
Total All subspecies		**78 096 km^2**							

In the Kidai area 5 rhinos are known to exist North of the Rufiji River (including the Beho Beho area). While the review team was visiting Sand Rivers, the Tanzanian Wildlife Division Pilot saw a rhino just South of the Rufiji River. There may possibly be one other rhino in this area. This gives an estimate of 6 rhinos for the Kidai area, with guesstimate of another single animal.

In the Lukuliro area there has recently been one confirmed sighting from the area, but based on Dung DNA ID work by Max Morgan-Davies and Coleen O'Ryan there was an estimated minimum of 9 different rhinos. There certainly could be a lot more rhinos in this area. Consequently, the estimate of 15 rhinos for the Selous GR is a minimum estimate and the true number of rhinos may be much greater. Hassan Sachedina estimates that based on previous work there may also be 5-8 rhino in the Horogwe area and 3-4 rhino in the Nahomba area. Sachedina's 1999 estimate for the Selous was 23-24.

3.2 Population monitoring and reporting

Patrols in the Kidai area have been looking for rhino spoor and been making occasional opportunistic sightings. Surveys were carried out by Max Morgan-Davies in the Lukuliro area, and rhino dung samples were collected and their DNA analysed in an attempt to determine the exact number of rhinos. Annex 8.2 contains a report on this work. Problems with plant inhibitors resulted in this approach being only partially successful.

While in the Selous GR the SADC review team was able to go on patrol with the Kidai guards. It was clear that monitoring of rhinos and their sign could be improved by (a), improving search patterns to increase return per unit effort and increase overall coverage; (b), using and developing skilled trackers to follow up spoor to try to get visual sightings of animals; and (c), considering sweeping some tracks on some key game paths with suitable substrates to facilitate getting good spoor records.

Rhino poaching was last recorded in the Selous GR in 1994. Formal records are kept in the form of Patrol Observation Sheets (POBS) of poaching incidents and arrests. Records of charges and sentences are also kept.

3.3 Requirements for surveys and monitoring

Further Dung DNA ID work is required to resolve the problem of plant inhibitors. When this has been done, dung samples can be ID'd and the RHINO programme could be used to estimate numbers. The efforts of the SADC rhino programme in this regard should ensure they dovetail with existing initiatives by IRF to fund such research in the Selous GR.

The Kidai rhino project will continue to survey for rhinos and sign. However the SADC review team identified the need to use specialized trackers and to follow up spoor to try to see the animals. In addition searching and patrolling sampling strategies could be improved to increase spoor/animal encounter rate.

4 MANPOWER AND OTHER RESOURCES FOR RHINO CONSERVATION

4.1 Anti-poaching resources

In the Selous GR (Area: 50,240 km²), the total security staff complement is ca. 330, with 10% at any one time not truly operational (i.e. back in stations). These men are deployed in 7 sectors (an 8th area is soon to be added, and probably to 9 are required), each headed by a Game Warden and Assistant Game Warden with university degrees or diplomas. The remainder start as field assistants and become game scouts after one year intensive training. Senior game scouts have obtained the certificate after a rigorous one-month training course that is undertaken in the Selous, handled in-house by the wardens. Mr Benson Kibonde co-ordinates the wardens and is based in Dar-es-Salaam.

The Selous GR budget, excluding salaries, is US$1,5 m provided direct from the government, which represents close to 50% of the government accrued revenue retained from the Selous (from hunting and tourism).

Vehicles: This varies from station to station, each having a minimum of 3 4x4 vehicles, and some as many as 7. There are 32 vehicles in the Game Reserve that are used for security work. Each station also has a lorry, with about another 3 in support in Dar.

Salaries:	Game scouts	TShs 55 000 pm} Gross salary before tax
	Senior scouts	TShs 65 000 pm} Additional benefits include pension
	Asst. Warden	Kshs 90 000 pm} plus TShs10,000 per day on patrol

As part of an elephant and rhino project funded by WWF in the eastern sector, there are 25 WWF-employed field Rangers. Most of these Rangers operate in the Kingupira/Lukuliro area, with a few in the Kidai area. It has been agreed that the government will take on their salaries at the end of a four-year period (in two years time).

The Selous GR is understaffed in terms of its ability to protect the rhino subpopulations effectively, while still securing the remaining areas. The Park Warden Mr Kibonde feels that the optimum staffing level is probably about 600.

4.2 Expertise available for specialised aspects of rhino management

Monitoring – currently advice is received from the Rhino Co-ordinator.

Capture – There is no expertise available for rhino capture at present, and this would depend on provision of a wildlife vet and capture team from outside Tanzania. Titus Melengeya is a vet based with TANAPA in the Serengeti NP, and he has been involved with rhino work. However for the Selous NP, Mr Kibonde indicated they would still depend upon an external vet for rhino work, as Dr Melengeya did not yet have sufficient rhino experience. Dr Melengeya could be used in a supportive capacity (to add to his experience), and in an emergency.

Ecological CC – currently advice is received through the Rhino Co-ordinator, although this expertise is not available in Tanzania.

Rhino tracking and radio-tracking – no specialised expertise is available in Tanzania.

4.3 Specialised equipment available for rhino management

Specialised equipment for capture/relocation: There is a four-wheel-drive Mercedes-Benz recovery truck in working condition at Ngorongoro. This has lifted rhinos and crates during the movement of rhinos from Seronera (Serengeti NP) to Ngorongoro. The NCAA has two rhino crates. There is concern that the present mechanic at Ngorongoro may not be available, so ongoing maintenance of this truck is uncertain.

The Faith Foundation also donated a rhino truck, which has a crane. This truck is in Iringa where "someone with the workshop is looking after it", and it is "probably better to assume that this truck does not exist". It was suggested that it would be a good idea to try to get hold of this truck and base it in the northern Selous (e.g. at Stiegler's Gorge Camp), where it could be kept undercover and under control

5 PARTICIPATION OF NON-STATE AGENCIES IN RHINO CONSERVATION

5.1 Community Involvement

According to Mr Kibonde there are no formal Wildlife Division programmes as such linked to rhino in the Selous GR, although occasionally the Wildlife Division gets information from individuals who can be rewarded.

Both GTZ and WWF have community approaches, but these do not specifically focus on rhinos. GTZ's Dr Siege has found it impossible to do anything constructive with one major hostile community of traditional poachers and feels that "no programme can keep them out of that". The EU project for the Selous GR was intended to have some community component but this is at a vague level of "if the possibility arises, informers will be used". The African Development Bank has a big programme in the Selous, involving communities on the eastern side. They are commissioning a socio- economic survey to decide what community programme should be developed.

5.2 Local and International NGO Involvement

Local NGOs: **Sand Rivers Rhino Project** - Government linkage with and approval of this project is through a memorandum of understanding. Total EU funding for the project is 616 000EU (ca. US$750 000) over two years, and will come through GTZ. An EU expert will lead the programme (Friedrich Alpers), but will be answerable to a Warden (attached fulltime to the project) through to the Director of the Wildlife Division.

International NGO's:

GTZ is directly linked as disbursement organ for the Selous Programme, but also provides support of technical nature for conservation.

WWF's Elephant & Rhino Programme operates in the in eastern Sector of the Selous GR, including the Lukuliro section. Financial support is provided for the project executant (Mr Malima). Budget ±US$200,000 per year. This pays for 25 WWF employed Rangers, and a ranger of post may have been constructive south of Lukuliro. There is also provision for some equipment. The project is also addressing community-based activity in collaboration with GTZ (but not with rhino as a specific focus).

FZS is currently supporting conservation of *D.b.michaeli* in Serengeti NP and NCAA.

Save the Rhino International is putting some money into Mkomazi GR and the Sand Rivers rhino project in the Selous GR. At Kidai they have helped with construction of a ranger post and pay the salary of a retired guard who now works at Kidai.

5.3 Private Sector Involvement

There is no private sector involvement with conservation of *D.b.minor* (there are no private game ranchers). Selous GR is the only *D.b.minor* population in Tanzania. Private individuals have been involved with support for the conservation efforts in Mkomazi Game Reserve (*D.b.michaeli*).

6 PROPOSED PROJECTS

Technical support to the Selous rhino project

The SADC rhino programme co-ordinator could be included in management planning for rhinos in the Selous GR, and could attend regular meetings and help identify sources of expertise within the SADC region that could assist rhino conservation efforts in the Selous GR.

Improved sampling design of patrols and patrolling techniques is recommended, along with a trial evaluation of the utility of using specialised trackers to follow-up spoor in order to obtain visual sightings of animals. It has been suggested that Zimbabwe DNPWLM Warden Norman English and his expert trackers be used for this purpose, with the possible additional use of SANP expert trackers during the proposed capture of Niassa wildebeest in the Selous GR

During the SADC review team's visit to the Selous GR, it was apparent that the failure of a previous project executant in the Selous to follow standard channels of communication with the Wildlife Division and the Tanzanian rhino co-ordinator created a number of problems. This ended up with the executant leaving the Selous and the selection of a new technical advisor for the proposed EU rhino project. During the review, a protocol for communications and import of technical advice was discussed with the Tanzania rhino co-ordinator, with a view to preventing similar problems occurring in future. It was indicated that all communications should in future be sent to the Director of Wildlife, but that any notes and correspondence should be copied directly to the rhino co-ordinator since he is the official representative to SADC and the AfRSG. The new EU technical expert, Friedrich Alpers, should keep the rhino co-ordinator informed regarding all correspondence and communications. It was agreed to that the AfRSG, WWF, and SADC rhino programme can respond to whoever communicates regarding SADC programme activities in the Selous GR, but must send copies of any correspondence to the SADC rhino co-ordinator (Rob Brett), the Tanzanian rhino co-ordinator (Mathew Maige), as well as Friedrich Alpers and/or whoever else requested the communication or advice.

Finally, there is need for further development of dung DNA monitoring techniques, perhaps using the Selous as a test area and co-ordinating with initiatives in this field by the IRF.

7 NATIONAL LEGISLATION AND POLICIES

Rhinos are protected as National Game under the Wildlife Conservation Act (No 12) of 1974, the National Game Order (No 274) of 1974, the Wildlife Conservation (Capture of Animals) Regulations (No 278) of 1974, and the Economic & Organised Crime Act (No 13) of 1984. A summary of the wildlife legislation for Tanzania, with species-specific details, is provided in Annex 8.3.

7.1 Penalties

Poaching carries a minimum of 10 years imprisonment, up to a maximum of 30 years, or a fine of 10 times the sport-hunting value of the rhino. These penalties are potentially a major deterrent to would-be rhino poachers. Wardens can fine up to 50 000/- for minor offences in protected areas (e.g. illegal entry).

7.2 Ownership of Rhinos

Apart from the clause stating that possession of 'government trophy' is illegal (this including CITES animals, and consequently rhinos) there are no clear provisions in the 1974 Wildlife Act for private ownership of wildlife, including rhinos. A consultancy report on ranching of wildlife has been undertaken by Malte Sommerlatte.

8 DATA SOURCES

8.1 Names, addresses and contact details of all informants/interviewees

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Mr Richard Bonham
Sand Rivers Lodge, Selous

Mr G.C. (Bimb) Theobold
Sand Rivers Rhino Project

Mr John Corse
Sand Rivers Lodge, Selous

Dr Ludwig Siege
Sector Co-ordinator Wildlife, GTZ
Dar-es-Salaam

Ms Jo Shaw
Save the Rhino International
UK

Mr Hassan Sachedina
PO Box 78170
Nairobi, Kenya
E-mail mobilia@iconnect.co.ke

8.2 Documentation

- Policy and management plan for Tanzania (Annex 8.1)
- General Management Plan for Selous
- Legislation – Wildlife Conservation Act 1974

9 TRADE AND IMPORT/EXPORT OF LIVE RHINOS

9.1 CITES Management Authority

The Wildlife Division is the Tanzanian CITES authority.

9.2 Veterinary Controls

Export certificates for black rhinos need to be signed by the Director and Chief Research Officer of the Wildlife Division. No specific information on veterinary requirements was available.

9.3 Past Imports and Exports

The only live trade to date has been in *D.b.michaeli* to and from South Africa.

10 HORN STOCKS

10.1 Control, Storage and Identification

Horn stocks recovered by the Wildlife Division are stored in Dar-es-Salaam, and those from Ngorongoro in a safe at Ngorongoro. TRAFFIC's Simon Milledge has been provided with information on Tanzania's horn stocks. Horns are marked with a number, which shows the district of origin and year of recovery. For example Mo/3/2000 is the third horn of year 2000 from the Morogoro district. However to be of use for horn fingerprinting, more detail information about the exact source of the horn is required. The need for development an audit trail for individual rhino horns was identified.

10.2 Involvement in AfRSG rhino horn fingerprinting project

Despite support for the project received by the AfRSG from the then Tanzanian country representative, the previous Director of Wildlife (Mr Mbano), and the then Acting Director of Wildlife (Mr Lyimo), no samples have been obtained to date from Tanzania. Arrangements had been made through Mr Mbano and Mr Lyimo for an AfRSG representative visiting Tanzania to go to Ngorongoro to cut horn samples, and then to transport the samples directly to the AfRSG offices in South Africa. All the necessary CITES permits were issued and the South African CITES import permit was made out to the NCAA. However, when the AfRSG's representative arrived at Ngorongoro, the Conservator refused him access to the horns and so no samples were collected.

Following further discussions during the SADC review, Mr Melita was positive. Unfortunately, it was not possible for the team to discuss the issue with NCAA Conservator directly. Mr Lyimo indicated that the exact origin of current horns in storage in Dar-es-Salaam could not be ascertained, and therefore none could be used for fingerprinting. Consequently, Tanzania still agrees in principle to supply samples from horns of known origin for fingerprinting. The Tanzanian rhino co-ordinator can co-ordinate the provision of these samples.

MALAWI (Task 1.2 – 1.12)

Review by Drew Conybeare (Country visit: 14 – 18 August, 2000)

1 MECHANISMS FOR PLANNING AND COORDINATING NATIONAL RHINO CONSERVATION EFFORTS

1.1 Rhino Management Authority

The national rhino management authority in Malawi is the Department of National Parks and Wildlife (DNPW), which falls under the Ministry of Tourism. The DNPW manages five National Parks and four Wildlife Reserves.

1.2 National Rhino Strategy

There is no formal national rhino strategy.

1.3 Action Planning

There are no formal conservation action plans. However, documentation at DNPW indicates that the intentions were to:

- Consolidate data on the range, distribution and population size of rhinos in the country;
- Establish a sanctuary and monitoring programme in Liwonde National Park; and
- Improve the DNPW funding base and infrastructure.

According to the Director, the Liwonde development was formally planned, but this document is not now easily locatable. The project is described in section 3.

1.4 Coordination Mechanisms

There are no formalised planning structures set up within DNPW specifically to deal with rhino conservation. This is probably because there is only one small, reintroduced population.

1.5 Focal Point

Dr Roy Bhima, Principal Parks and Wildlife Officer (Research), who is the Head of the Research division is the contact person within DNPW for the SADC Rhino Programme. He will also be Malawi's representative to the AfRSG.

1.6 Potential for facilitation by SADC rhino programme

The DNPW feels that it has the expertise to produce a comprehensive strategy and action plan for the management of rhino. It would, however, require support from the SADC Rhino Programme in the form of assistance to review the draft document and funding to implement aspects of the plan.

2 EXISTING MECHANISMS FOR COLLABORATION WITH OTHER RANGE STATES (Excluding SADC Rhino Programme)

2.1 Co-ordination with other range states

The DNPW entered into a project agreement with the South African National Parks Board for Liwonde National Park. The major activities of the project were to construct an electric crop protection fence along the Park boundary, introduce some rhinos from South Africa, and construct a tourist camp. Some staff were also given a training course in Kruger National Park. This project has apparently not been formalized through any high-level bilateral agreement, and communication between South African National Parks and DNPW has been mainly between Dr Anthony Hall-Martin and the Director of DNPW.

Although the details are not entirely clear, it appears that these rhinos were donations from the South African Government with air transport provided by the South African Air Force.

2.2 Existing commitments with other SADC range states

The South African intention (according to a letter from Dr Hall-Martin) was to set up a project between South Africa, Malawi and Mozambique in which rhino from Mozambique would be added to the Liwonde population to increase the genetic diversity of that population. Ultimately translocations back to Kruger NP would benefit the South African population, and a population could also be established in an appropriate protected area in Mozambique. To date there has been no communication with Mozambique authorities on this intention.

3 RHINO POPULATION STATUS

3.1 Summary Statistics on rhino numbers, distribution and trends

In the early 1980s there were about 12-15 rhinos in Kasungu National Park and 8-12 in Mwabvi Wildlife Reserve. By 1990, these had all been killed as a result of cross-border poaching from Zambia and Mozambique.

Following reintroductions from South Africa, there are now seven black rhinos (*Diceros bicornis minor*) in Malawi, located in the rhino sanctuary within Liwonde National Park. These are two adult males, two adult females and three offspring of undetermined sex.

Liwonde Project

Liwonde National Park is 538 km^2 in area, situated on the Shire River in southern Malawi. The average annual rainfall is about 1 000 mm and the Park is 500 m above sea level. In collaboration with South African National Parks it was agreed to institute a development project to fence the Park to minimise wildlife/human conflict, improve the infrastructure, train staff, translocate animals and construct a tourist camp. An electrified Veldspan boundary fence was constructed in 1990. Full agreement with the surrounding communities was apparently not reached and the fence was largely destroyed by villagers. The wire was used for snares, with resulting declines in the numbers of many of the species in the Park. The communities later realised the advantages of the fence and requested its re-erection, which has now been done.

One male and one female rhino aged about 5-6 years were introduced from South Africa in 1993, followed by another pair in 1998. The first pair has produced two calves and the second pair one calf. The initial introduction was made into bomas within a 1 500ha (15 km^2) electric fenced sanctuary. When the second pair arrived they were released into a second paddock adjoining the first but the dividing fence was not removed immediately. This fence was subsequently removed to make a 38 km^2 sanctuary. The translocation of another pair of rhino is expected from South Africa in October 2000, and another paddock of 10 km^2 is being added to the existing sanctuary.

The first four animals introduced came from Kruger National Park. Of the two animals due in 2000, one is expected to come from Kruger and one from Pilanesberg. The first calf was born in June 1997, the second was in 1999 and the third was first seen in March/April 2000.

Prior to the introduction of the rhinos, a group of Scouts and one Parks and Wildlife Assistant (Ranger) went to Kruger National Park and received training in various aspects of rhino protection (such as firearm handling, tracking, radio procedures and rhino behaviour). This group returned to Liwonde with the first introduction of rhinos and formed the Rhino Protection Unit that started guarding the rhinos on a full time basis. The rhinos share the Park with a range of other species, including about 400 elephants, and there are also other species within the sanctuary.

3.2 Population monitoring and reporting

Two armed Scouts are on patrol in the Liwonde sanctuary continuously, and at any one time there are also four attendants patrolling the fence. The scouts are rotated weekly, and are in full-time radio contact with the Warden's office.

There has been one incident of scouts exchanging fire with poachers who were trying to enter the Sanctuary. The Protection Unit produces patrol reports at the end of every month. The level of detail of the information gathered is not clear but data are held by the Park Warden.

3.3 Requirements for surveys and monitoring

There are no requirements for surveys, as DNPW does not think that there are any other rhinos remaining in the country. There were reports of rhino presence in Namizimu Forest Reserve in 1993/94, but follow-up investigations did not confirm these.

4 MANPOWER AND OTHER RESOURCES FOR RHINO CONSERVATION

4.1 Anti-poaching resources

The total scout establishment in Liwonde NP is 27, a density of 1:20 km^2, and there are 4 Rangers, 1 Warden and 1 Research Officer. The rhino sanctuary at Liwonde is an electric fenced area of 38 km^2, protected by a Rhino Protection Unit 24 hours a day.

The recurrent budget was said to be about MK2000-3000 per month, mostly donated (R. Bhima pers. comm., but see section 5.2).

There is a road network in the sanctuary and two artificially supplied water points. There are no vehicles specifically attached to the rhino sanctuary. There is one water bowser, to provide water for the patrolling scouts.

Salary scales are shown below. In addition to the salaries shown, field allowances may be paid at a rate of MK2500 per month for scouts and MK3060 per month for Parks and Wildlife Assistants, if they are in the field for more than 14 days. No field allowances are paid to Assistant Parks and Wildlife Officers.

Annual Salary scales for some junior staff in DNPW in Malawi
PW - Parks and Wildlife USD1:MK60 (August 2000)

Grade	Malawi Kwacha (MK)	USD
PW Scout	13512 - 23928	225 - 399
Field Allowance	2500/month	42/month
PW Assistant	20412 - 34452	340 - 574
Field Allowance	3060/month	51/month
Assistant PW Officer	34692 - 41892	578 - 698

4.2 Expertise available for specialised aspects of rhino management

The availability of specialised expertise in rhino management is as follows:

Rhino tracking: the Rhino Protection Unit attended a course in rhino protection in South Africa that included a module in rhino tracking. This course was for junior staff only.
Rhino Capture: there is no expertise. Past capture has been done by the SANP.
Veterinary expertise has been supplied by the Department of Animal Health. The veterinary officers have not received special training in rhino management.
Ecological evaluations and demographic monitoring can be done by the Wildlife Research Unit. The Research Officer at Liwonde can undertake monitoring activities with guidance from the Principal PWO (Research).

4.3 Specialised equipment available for rhino management

There is no specialised rhino management equipment available, such as recovery vehicles, helicopters, crates etc. When translocations were made from South Africa, all the equipment was supplied by the donors.

5 PARTICIPATION OF NON-STATE AGENCIES IN RHINO CONSERVATION

5.1 Community Involvement

A collaborative approach is being pursued as the new strategy for managing Liwonde National Park. The Liwonde NP Advisory Committee was formed in 1997/98, comprising various stakeholders including community representatives, political leaders, local NGOs and the South African High Commission. Although minutes of previous meetings do not indicate discussion of rhino conservation and management, this can be included when necessary. The intention ultimately is to release rhinos into the National Park and cooperation of the local community will be key to their future security. There does not appear to be any real direct community involvement in rhino conservation.

5.2 Local and International NGO Involvement

The most important NGO involved in rhino conservation in Malawi is a local group of businessmen known as the "J & B Circle of Friends". The name comes from a connection with the whisky manufacturer Justerini & Brooks Ltd of London that was involved in the rhino reintroduction project through its "Care for the Rare" programme from the start. J & B funded some of the transportation costs of the initial introduction from South Africa to Malawi. The J&B Circle has assisted with funding of transport for the animals from Blantyre to Liwonde, construction of the rhino bomas and sanctuary, and also with recurrent costs of rhino management and maintenance of the sanctuary (B. Palmer, pers. comm.). The money is almost entirely raised locally and the annual support is presently about MK1,5 m. J & B (UK) also makes a smaller annual contribution. The J&B Circle are funding the extension to the rhino sanctuary at a cost of about MK 2,5 m.

Frankfurt Zoological Society is funding the Scout Training Programme. This is based in Liwonde NP but is national in scope and not restricted to rhino conservation. It started as a 2-year programme and has been extended for 2 years to 2000. It is now to be extended for a further 2 years.

Community Partnerships for Sustainable Resource Management (COMPASS) is a USAID Malawi funded organisation that aims to help build capacity for local communities to manage their natural resources in a sustainable manner. It gave assistance with construction of staff accommodation in the rhino sanctuary.

WWF-US funded a monitoring project for the rhinos in Liwonde NP that led to a publication (Bhima and Dudley, 1996). The Wildlife Society of Malawi was also involved in that project.

5.3 Private Sector Involvement

Private sector involvement, particularly by the J&B Circle, is clearly very important in rhino conservation within Malawi, in addition to the major role of the SA National Parks Board in contributing rhinos for reintroduction. There is also a facility for private sector involvement with DNPW in general through the system of Honorary Rangers.

6 PROPOSED PROJECTS

The following projects were suggested by DNPW (R. Bhima, pers. comm.),

Ecological surveys

As the DNPW is still in the process of building the rhino population there is a need to verify the carrying capacity of the rhino sanctuary in Liwonde NP, to ensure that the rhino density does not exceed the optimum density for maximum reproduction. The area has been described as having a relatively low capacity by Emslie and Brooks in 1999 (IUCN African Status Survey and Conservation Action Plan).

A detailed monitoring programme of the habitat should also be done to monitor the dynamics of the vegetation. There has only been one study of the vegetation in the sanctuary (Bhima and Dudley, 1996). Studies have not continued in the old sanctuary and have not been initiated in the expanded area of the sanctuary. Observations on rhino interactions and their habitat preferences would also be suitable ecological studies. Detailed proposals for these studies will be prepared.

Development of a Management Plan

The objective of the rhino project at Liwonde is stated in correspondence only (i.e. there is no specific rhino management plan). A Management Plan will specify the role of the different sections of DNPW and that of the J&B Circle of Friends in the day-to-day management of the rhino. As the situation is now, there is often confusion arising between DNPW staff in the Park and the J&B Circle of Friends.

7 NATIONAL LEGISLATION AND POLICIES

The primary wildlife legislation in Malawi is the National Parks and Wildlife Act (No. 11 of 1992). Copies of the Act and Policy and also National Parks and Wildlife (Protected Species)(Declaration) Order, 1994 can be found in Annex 9.1.

7.1 Penalties

The Act makes no specific reference to rhinos but provides for certain species to be listed as protected species on an annual basis, and this list has included rhino. The penalty for killing a protected species unlawfully is a fine of MK10,000 and imprisonment for 5 years.

DNPW has recently drawn up a Wildlife Policy (Annex 9.2) that does make provision for conservation of wildlife on customary (communal) land and on private land, and the National Parks and Wildlife Act is under review in order to take the new policy requirements into account. The requirement for the annual listing of protected species is likely to be replaced by a permanent list. The penalty for killing a protected species is likely to be increased to MK50,000 and imprisonment for 10 years.

7.2 Ownership of Rhinos

In the National Parks and Wildlife Act, ownership of wild animals existing in their wild habitat is vested in the President. The Act makes no specific reference to wildlife on private land or private ownership.

8 DATA SOURCES

8.1 Names, addresses and contact details of all informants/interviewees

Mr L. Sefu, DNPW, Director. P.O. Box 30131, Lilongwe 3, Malawi. tourism@malawi.net

Dr R. Bhima, DNPW, Principal Parks and Wildlife Officer (Research). P.O. Box 3013, Lilongwe 3, Malawi. sadcwstcu@malawi.net

Mr A. Ferrar, DNPW, Technical Adviser, P.O. Box 3013, Lilongwe 3, Malawi.

Mr B. Palmer, J&B Circle of Friends. c/o Stewarts and Lloyds Pvt. Ltd., P.O. Box 579, Blantyre. bpalmer@malawi.net.Tel: 635033/102/335/481

Other people cited by Dr Bhima, but not interviewed by me.

Mr H.E. Nzima, DNPW, Deputy Director. Address as above.

Dr A. Hall-Martin, South African National Parks, P.O. Box 787, Pretoria 001, South Africa

Mr M. Labuschagne, Frankfurt Zoological Society Training Programme, Liwonde National Park, P.O. Box 41, Liwonde, Malawi.

Mr A. Dzimbiri, Assistant Parks and Wild Life Officer (Management), Liwonde National Park, P.O.Box 41, Liwonde, Malawi.

Mr A. Chirwa, Assistant Parks and Wilife Officer (Research), Liwonde National Park.

Dr C.O. Dudley, Wildlife Society of Malawi, c/o Chancellor College, P.O. Box 280, Zomba.

8.2 Documentation

Bhima, R. and Dudley, C.O. (1996). Observations on two introduced black rhinos in Liwonde National Park. *Pachyderm* **21:**46-54

DNPW (1998). Management Plan for Liwonde National Park. DNPW, Lilongwe, Malawi.

Ministry of Tourism and National Parks (1998) Wildlife Policy. Department of National Parks and Wildlife. January 2000.

Republic of Malawi (1992) National Parks and Wildlife Act (No 11 of 1992). 4th May, 1992.

Republic of Malawi (1994) National Parks and Wildlife (Protected Species) (Declaration) Order, 1994. Government Notice No. 89. 30th March, 1994.

9 TRADE AND IMPORT/EXPORT OF LIVE RHINOS

9.1 CITES Management Authority

The Director of National Parks and Wildlife is the Management Authority for CITES. Requirements for import/export are the standard CITES import and export permits.

9.2 Veterinary Controls

Veterinary requirements for the previous imports in 1998 were:

- Inspection and certification as free of disease in South Africa by a state veterinarian or private veterinarian approved by Government.
- The animals to come from an area with no clinical cases of Foot-and Mouth Disease.
- The animals to have had no contact with Anthrax within the previous month.
- After arrival in Malawi, quarantine for 21 days with an inspection by a Malawi Government veterinarian.

9.3 Past Imports and Exports

Previous importations have been:

- October 1993. 2 rhino from Kruger NP, South Africa to Liwonde National Park. Donation.
- September 1998. 2 rhino from Kruger NP, South Africa to Liwonde National Park. Donation.
- October 2000 (proposed importation): 2 rhino from South Africa, 1 from Kruger, 1 from Pilanesberg to Liwonde National Park. Donation.

10 HORN STOCKS

10.1 Control, Storage and Identification

The DNPW has no stocks of rhino horn. If some horn was collected from the Liwonde sanctuary it would be kept in the main storeroom in Lilongwe where ivory is stored, where records are kept using the CITES format. Horns would be tagged and numbered for identification.

10.2 Involvement in AfRSG rhino horn fingerprinting project

There has been no involvement in the AfRSG rhino horn fingerprinting project, as there are no horn stocks. Horn samples from the offspring of imported animals could be of interest to this project.

ANGOLA (Task 1.2 – 1.13)

Review compiled by Rob Brett (No country visit made)

1 MECHANISMS FOR PLANNING AND COORDINATING NATIONAL RHINO CONSERVATION EFFORTS

1.1 Rhino Management Authority

The management authority for rhinos is the *Instituto de Desenvolvimento Florestal* (IDF) (Forestry Development Institute), which has a Department of Wildlife and Protected Areas. There is also the *Direcção Nacional da Africultura e Floresta* (DNAF) or the National Directorate of Agriculture and Forestry, which is responsible for policy. Each agency has a wildlife department and a head of wildlife. The IDF was established in July 1989, and the DNAF was created in early 1992.

1.2 National Rhino Strategy

There is no formal rhino conservation strategy document.

1.3 Action Planning

There is no action plan for rhino conservation in Angola.

1.4 Coordination Mechanisms

There is no formal committee or structure for planning rhino conservation in Angola.

1.5 Focal Point

Nkosi Luta Kingengo, Advisor, *Instituto de Desenvolvimento Florestal* (IDF), who represented Angola at the SADC rhino programme stakeholders meeting in March 2000.

1.6 Potential for facilitation by SADC rhino programme

There is assumed to be considerable potential for the programme to assist in formation of planning structures and the development of any strategy or plans for rhinos in Angola. Technical assistance for development of plans for wildlife management and protected areas in Angola is a stated need (Kingengo 2000).

2 EXISTING MECHANISMS FOR COLLABORATION WITH OTHER RANGE STATES
(Excluding SADC Rhino Programme)

2.1 Co-ordination with other range states

10 white rhinos were introduced to Quiçama NP from Natal Parks Board in 1968. Present co-ordination with South Africa has resulted in the recent translocation of ca. 30 elephants from NWPTB (RSA) to Quiçama NP in Angola. This could presumably be extended to rhinos, and Quiçama NP have confirmed that they area interested in acquiring white rhinos for Quiçama NP from NWPTB. It should be noted that Quiçama NP is outside the historical range of both black and white rhinos (Emslie & Brooks 2000).

2.2 Existing commitments with other SADC range states

No information available.

3 RHINO POPULATION STATUS

3.1 Summary Statistics on rhino numbers, distribution and trends

There has been no survey to determine the status of rhinos in Angola since independence (1975), although during a relatively peaceful period in the MPLA/UNITA civil war, assessments were made of

the status of wildlife (Kwaramba 1992) and elephants (Anstey 1993a). There has been no formal information available on rhinos since 1971, when a survey on Iona NP estimated 30 rhinos (Brian Huntley, who also indicated that rhinos were present in certain areas of Cunene and Kuando Kunbango provinces. The only other information available on black rhinos in the southeast corner of Angola dates from 1989-90, when the MET Namibia game capture unit and local informants were monitoring 5-6 animals with ranges on the Kaprivi-Angola border, west of the Kuando river (Morkel, Kibble, pers comm.). A cow and calf (nominally *D.b.chobiensis*) were captured on the border ca. 10 km west of the Kuando, and moved to Mangeti GC. No other animals were recovered, and there has been no reliable information available on this area since then. It is most probable that both black and white are extinct in Angola.

3.2 Population monitoring and reporting

No official information available on rhinos in Angola since independence.

3.3 Requirements for surveys and monitoring

No recent reports of any rhinos in Angola provide any basis for surveys or monitoring, albeit compromised by the continuing civil war and large areas inaccessible to survey. Any plans for re-introduction of rhinos to Angola would have to include minimum standards for surveillance and monitoring.

4 MANPOWER AND OTHER RESOURCES FOR RHINO CONSERVATION

4.1 Anti-poaching resources

No information available, except for Quiçama NP

4.2 Expertise available for specialised aspects of rhino management

None.

4.3 Specialised equipment available for rhino management

None.

5 PARTICIPATION OF NON-STATE AGENCIES IN RHINO CONSERVATION

5.1 Community Involvement

None

5.2 Local and International NGO Involvement

Presently, none, although the Kissama Foundation (www.kissama.org) may well become involved if, as it hopes, it introduces rhinos to Kissama NP from RSA.

5.3 Private Sector Involvement

None.

6 PROPOSED PROJECTS

The possible introduction of white rhinos to Quiçama NP (second introduction) would be the most likely way of recommencing the conservation of rhinos in Angola, although not to former range or with a continentally key or important population. However, southern white rhinos would be relatively more expendable and of less liability to regional rhino conservation. A re-introduction of black and/or white rhinos to Iona NP in south west at a later date, potentially as part of a TFCA with Namibia, would be of more significance and justification from a regional and continental perspective, particularly if the area was adequately protected and the appropriate ecotype (*D.b.bicornis*) was involved.

7 NATIONAL LEGISLATION AND POLICIES

The pre-independence *Regulamento de Caça* of 1955 is still the basis for the current wildlife legislation, which advocated for the conservation of wildlife, and for the establishment of more national parks and reserves. The *Regulamento de Caca* provides for five categories of Protected Area and for the protection of certain species. In 1972, the hunting of black-faced impala, brown hyaena and marine turtles was prohibited, and general hunting costs increased. Hunting has been suspended since 1976. The wildlife legislation for Angola, with species-specific details, is provided in Annex 10.1

8 DATA SOURCES

8.1 Names, addresses and contact details of all informants/interviewees

Nkosi Luta Kingengo, IFD, P O Luanda, Angola. Tel +244 323 934

Ramos Buta, ARDRA. ardra-lbengo@angonet.org

Vladimir Russo, President, Juventude Ecologica Angolana, P O Box 52, Luanda, Angola vlrusso@hotmail.com

Dr Joao Serodio, jmserodio@hotmail.com. Fax +244 2 393943

Prof W van Hoven, President, Kissama Foundation. wvanhoven@hotmail.com

Peter Kibble, P & L Engineering, Windhoek, Namibia. Tel +264 61 234257.

Peter Morkel, SANP, P O Box 110040, Hadison Park, 8306 Kimberley, RSA. gamecap@kimnet.co.za

8.2 Documentation

Anstey, S G (1993a) Angola: elephants, people and conservation. A preliminary assessment of the status and conservation of elephants in Angola. IUCN ROSA report 26 pp.

Anstey, S G (1993b) Angola: Conservation and Conflict. IUCN ROSA discussion paper.

Kingengo, L N (2000) Angola – an overview of wildlife status. Presentation to the stakeholders meeting of the SADC regional rhino conservation programme. Johannesburgy, March 2000.

Kwaramba, R (1992) Angola: a report on the current status of wildlife and habitats. World Wildlife Fund – US, Africa Programme report. 40 pp.

Republic of Angola (1955) *Regulamento de Caça*

9 TRADE AND IMPORT/EXPORT OF LIVE RHINOS

9.1 CITES Management Authority

The *Instituto de Desenvolvimento Florestal* (IDF) is the CITES management authority for Angola. No other information available.

9.2 Veterinary Controls

No information available.

9.3 Past Imports and Exports

Year	Source	Destination	No	Transaction
1968	Umfolozi GR	Quiçama NP	10	Donation

10 HORN STOCKS

10.1 Control, Storage and Identification

No information available.

10.2 Involvement in AfRSG rhino horn fingerprinting project

There has been no involvement in the project to date.