

DEPT. OF NATIONAL PARKS
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**BLACK RHINO
CONSERVATION PROJECT**

**Emergency Plan
1993**

DEPARTMENT OF NATIONAL PARKS
AND
WILD LIFE MANAGEMENT
ZIMBABWE

10 September 1993

(i)

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1. PROBLEM TO BE ADDRESSED

Zimbabwe's black rhino population was probably at its highest level in the early 1980s. Rhino numbers are extremely difficult to estimate but it is unlikely that there were fewer than 3,000 in the country at that time. Illegal hunting of black rhino in Zimbabwe was first detected at significant levels in the last three months of 1984 in the lower Zambezi Valley. Heavy losses (approximately 500) were experienced from 1985-1987 in the Valley and, in 1988, illegal hunting spread to all rhino populations in the country. By April 1992 and prior to dehorning operations, the Department estimated the population of black rhino to be 1,500. By September 1, 1993 the estimated black rhino population has dropped below 300.

Levels of illegal hunting are increasing. Whereas until 1990 virtually all illegal hunting was carried out by nationals of neighbouring countries, during the past three years Zimbabwean locals have become significantly involved in both hunting and trafficking in horn. The rate of incursions from neighbouring countries has escalated from a level of one incursion per week in the first few years of Operation Stronghold to about one incursion every day in 1992.

The dehorning programme has not led to significant discouragement of rhino poaching; in fact, even dehorned rhinos are being killed by poachers.

The black rhino population in Zimbabwe is unlikely to survive in viable numbers beyond 1994 under present conditions.

In such a crisis situation a workshop was held by the Department of National Parks and Wild Life Management (DNPWLM) between September 2 - 8, 1993 to draw up a plan of operations for immediate funding and action. The workshop results are documented in the ANNEXES. The list of workshop participants is documented in ANNEX 7.

The major problems that have contributed to the crisis situation are discussed below.

1.1 DECREASING BUDGETARY ALLOCATIONS IN REAL TERMS

A comparison of figures of Financial Year (FY) 1993/1994 with that of 1981/1982 shows that the departmental budget has been decreasing in real terms as follows:

Year	Allocation <u>Z\$</u>	Equivalent <u>US\$</u>	Ex.Rate <u>Z\$/US\$</u>
1981/82	25 mill.	19.23	1.3/1
1992/93	36 mill.	7.20	5.0/1
1993/94	39 mill.	5.82	6.7/1

Although there has been an increase in nominal terms, the decrease in real terms effects the Department's financial ability to maintain and replace vehicles and equipment required for operations. For successful protection of rhino populations in the wild, the minimum level of recurrent expenditure required to support one man/50 sq.km is US\$ 200/sq.km and this rises to US\$ 400/sq.km in the case of one man/20 sq.km. This expenditure includes salaries and refers to 1989 costs. With the total Parks and Wildlife Estate approximately 50,000 sq.km, the level of expenditure in the FY 1993/94 budget is at US\$ 116/sq.km.

In December 1992, the Ministry of Finance requested the Department to surrender 10% of the total budget (Z\$ 36 million) allocated for FY 1992/93. The department surrendered all the cash left (Z\$ 1.8 million) and ordered field operations to be stopped with immediate effect. As a result of freezing field operations during the first four months of 1993 and increased poaching, the number of white rhino in Hwange National Park, estimated at 100 in December 1992, dropped to 10 by August 1993. Additionally, there was a loss of black and white rhino to poachers in other protected areas.

For the FY 1993/1994, the Ministry of Environment and Tourism submitted a budget request to the Ministry of Finance for Z\$ 61 million. The approved budget for FY 1993/1994 has been indicated at Z\$ 39 million. In real terms, the budget allocated is less than that of FY 1992/93. Disbursements made since July 1993 on the basis of the indicative figure have already been spent on settling backlog of bills from FY 1992/93. Operating at the same level as 1992/93, the funds on operational votes will be exhausted by the end of December 1993. This means that in the last 6 months of the financial year the Department will be without funds. The Ministry of Finance has been approached for entertaining a supplementary bid of Z\$ 24 million for the FY 1993/94.

1.2 REDUCED MANPOWER & POOR CONDITIONS OF SERVICE

The capability for effective law enforcement is also declining due to reduced manpower. The retrenchment of 261 scouts under the Economic Structural Adjustment Programme (ESAP) has greatly weakened the Department's ability to cope with intensive illegal hunting. The Department is now thin on the ground.

Morale of staff is being adversely affected by poor conditions of service in relation to other branches of the armed services including salaries, field allowances and incentives, and a lack of recognition for their efforts both within Government and outside it.

1.3 NON-AVAILABILITY OF A FLEXIBLE FUND FOR FINANCING OPERATIONS

Within the present system, the Department's operations are dependent on the size of budgetary allocation by Government. There is no fund available to the Department that can ensure funding of field operations even in periods of fluctuating budgets and financial crisis. Risks from decreasing budgets in real terms and reduction or freezing of approved allocations in the middle of a financial year can be off-set by the establishment of a flexible fund for financing operations and replacement of vehicles and equipment on a sustainable basis. Such a fund could be set up with current income of the Department, an initial annual subsidy by government, and contributions by donors and non-governmental organizations.

1.4 ORGANISATIONAL AND MANAGEMENT PROBLEMS WITHIN DNPWLM

The present organisational structure dates back to 1975. This structure consists of vertical Departments responsible for functions in isolation of each other at the senior, middle and field levels of operation. Functions like law enforcement are considered in isolation of specialist services consisting of wildlife conservation and management practices. For years, operations have been compartmentalized in vertical Departments having line functions with little focus on nurturing horizontal integration and cooperation amongst Departmental staff. Hence, there are no institutionalized instruments of inter-disciplinary decision-making and implementation at the senior, middle and junior levels.

Furthermore, within the Department there is:

- *by-passing* of existing decision-making and disciplinary structure by staff;
- *no close coordination and cooperation* between research and management at senior level which is a destabilizing factor for cooperation among field staff;
- *no team-building* at field level between area ecologists and law enforcement staff and hence, no functional organizational structure at the field level that is integrated in its approach and operations;
- *no adherence to the decentralized structure* at provincial warden level; in fact, their authority and flexibility to position staff and administer effectively has been undermined by directives from the Head Office, thus reinstating centralization rather than decentralization;
- *no mechanism for conflict resolution*; in fact, there is an increased practice of conflict avoidance which only delays the disastrous impact of unresolved system conflicts and changes them into ugly, personal conflicts; and
- *contradictory directives* from top management.

2. RATIONALE FOR SELECTING A PROJECT APPROACH

In the light of macro and micro level problems of the Department mentioned above, any action pertaining to reversing the decline in rhino population will have to be considered as a *priority* and, therefore, having the status of *a project of high national importance*. The project should have a *clearly delineated project management with sufficient flexibility to manage and coordinate operations at the field level*. It should report to a rhino Coordination Group consisting of senior management staff within the Department that acts as a steering, action-oriented, problem-solving body. For the project to succeed, clearly earmarked funds are required for an establishment phase of at least three years. The details of the project implementation set-up are given below in section 7.

3. SELECTION OF INTENSIVE PROTECTION ZONES (IPZ)

An IPZ is strategically defined as an area within the Parks and Wildlife Estate that contains a viable population of rhino, either black and/or white, that can be protected by the Department of National Parks staff from armed poaching gangs, providing time for the rhino to recolonize their entire former home range. The IPZs are being established to afford maximum protection for Rhinos (and elephants which are coming under increasing threat) in a natural and wild environment.

The selection of viable intensive protection zones for the Black Rhino Conservation Project within the Parks and Wildlife Estate has been done by examining 14 National Parks areas which are considered as significant in terms of rhino population and/or suitability of habitat. These areas were subjected to a ranking (see ANNEX 1) against the following criteria:

- Suitability of habitat for rhino
- Presence of rhino
- Long distance from national borders
- Friendly/Collaborative neighbouring communities
- Easy response possible, and
- Effective patrolling possible.

The scoring was: 1 as highest score for positive and 0 as a negative score. The first five prioritized National Parks areas in order of ranking are:

1. Matobo National Park
2. Hwange National Park
3. Matusadona National Park
4. Chipinge Safari Area, and
5. Chizarira National Park.

The shortlisted five areas were further evaluated (see ANNEX 2) in terms of:

- Total area
- IPZ area
- Carrying capacity
- Potential rhino population
- Actual rhino population
- Staff requirement for IPZ, consisting of
 - No. required
 - Presently in position
 - Additional required
- Staff required for entire Park (with and without an IPZ) and
- Game scouts effectively patrolling at present.

Notes on calculations concerning carrying capacity, potential population, and estimates of required manpower are given in ANNEX 2.

Furthermore; existing resources of all 5 shortlisted IPZ areas were considered (see ANNEX 3) with identification of additional resources required to make them effective. The cost estimates of operating the selected IPZs and the budget shortfalls are discussed below.

4. COST ESTIMATES OF OPERATING IPZs AND BUDGET SHORTFALL

Detailed cost estimates are given in ANNEX 4 and a summary table in ANNEX 5. An overview of the total estimated expenditure required and the budget shortfall for all 5 IPZs are given below.

OVERVIEW OF ESTIMATED COSTS AND SHORTFALL (Z\$ 000s)

<u>AREA</u>	<u>TOTAL EXPENDITURE</u>	<u>TOTAL SHORTFALL</u>
MATOBO	1178	716
HWANGE	6123	4369
MATUSADONA	3308	2847
CHIPINGE	1785	1566
CHIZARIRA	<u>3208</u>	<u>2746</u>
GRAND TOTAL	15602	12244

From the five shortlisted IPZs, 4 were selected as being the most suitable ones for investment. The selection of the first four, excepting Chizarira National Park, reflects 2 small and 2 large IPZs. The remaining rhinos in Chizarira will be translocated to the IPZ in the Matusadona National Park.

The table below gives an overview of investments per unit area and per rhino.

IPZ	AREA sq. km	RHINO POP.	Z\$ (000s)			US\$	
			CAPITAL EXPEND.	RECURRENT EXPEND.	TOTAL EXPEND.	RECURRENT US\$ per km ²	RECURRENT US\$ per Rhino
MATOBO	105	12	636	542	1178	770	6741
HWANGE	1300	113	3000	3123	6123	358	4125
MATUSADONA	500	35*	1801	1507	3308	449	6426
CHIPINGE	150	9	1051	734	1785	730	12176
CHIZARIRA	250	18	1944	1264	3208	755	10482

* Rhino population assumed at 35 after translocation
Exchange Rate used: US\$ 1 = Z\$ 6.7

5. MANAGEMENT OBJECTIVES OF IPZ

The *overall goal or justification* for establishing the IPZs is to:

"Prevent the extinction of black rhino on the Parks and Wildlife Estate in Zimbabwe".

The *management objective* is to:

"Maintain a population of at least 100 free-ranging but individually monitored black rhinos on the Parks and Wildlife Estate, with an annual growth rate of at least 3% per annum and with no significant loss of genetic diversity".

The *outputs* of the project are:

1. Establishment of IPZs in Matobo, Hwange, Matusadona and Chipinge
2. Capture and Translocation of rhinos
3. Dehorning Operations
4. Intensive Boma Management
5. Monitoring of the rhino population, law enforcement and illegal activity
6. Coordination and Securing of Public Support.

The following *indicators* were suggested for measuring success:

1. Establishment of IPZs
 - At least 3 IPZs are in function by end of October 1993
2. Capture and Translocation
 - All stragglers outside IPZs are relocated
3. Dehorning
 - No rhino with horns of significant size
4. Boma management
 - Maintenance of health and successful release into an IPZ or conservancy
5. Monitoring
 - Tracking system in place;
 - Patrols and reporting system operational.

6. ACTIVITY PLANS

All the above mentioned outputs have major activities which have been defined (see ANNEX 6) in terms of responsibility for carrying them out, deadlines for completion, and present status.

7. IMPLEMENTATION STRUCTURE OF IPZs

The establishment of IPZs under a project management operational at field level requires the setting up of the following project implementation structure:

7.1 PROJECT STEERING: RHINO COORDINATION GROUP AT HQ

At the Head Office of the Department in Harare, a Rhino Coordination Group should be set up under the chairmanship of the Deputy Director, Management, meeting on a monthly basis and consisting of the following permanent members:

- Deputy Director, Management (Chairman)
- Deputy Director, Research
- Chief Warden
- Rhino Conservation Coordinator (RCC)
- Counterpart to the Rhino Conservation Coordinator (External Consultant seconded to DNPWLM from the International Rhino Foundation),
- 4 Provincial Wardens from Provinces having IPZs (initially for a period of three months on a regular basis; subsequently, as and when required), and
- Veterinary Unit, as and when required.

The Rhino Coordination Group within the Department should not be confused with the existing Rhino Coordination Committee which is to continue meeting in future on a quarterly basis. As opposed to the Group, the Committee is a forum for discussion with external partners of the Department.

The Rhino Conservation Coordinator should be selected from among the group of existing Provincial Wardens and given a full-time special assignment as project manager for the Black Rhino Conservation Project. His role has been defined in section 7.2 below.

In its monthly meetings, the Rhino Coordination Group at Head Office shall review progress in implementation of activities in the IPZ, discuss and document monitoring data on rhino population, mortalities, illegal activities and law enforcement. Funding arrangements, and funding situation shall also be examined and necessary decisions taken to cover shortfalls. Any problems faced in project implementation which are brought to the attention of the Rhino Coordination Group shall be discussed with a view to taking immediate action in solving those problems. Deadlines shall be set by the Group for monitoring of project progress in the next meeting. The RCC and his counterpart shall submit a monthly report, take minutes of the meeting, and distribute these to the members of the group and all Provincial Wardens and Wardens in the IPZ areas.

7.2 ROLE OF RHINO CONSERVATION COORDINATOR

As a project manager, the Rhino Conservation Coordinator will be based in Harare at the Department's Head Office but expected to travel to the IPZ areas. The specific tasks of the RCC are to:

- formulate detailed plans for design and operation of intensive protection zones in conjunction with Provincial Wardens and Wardens of designated IPZs;
- coordinate implementation of IPZs in conjunction with Provincial Wardens and Wardens;
- ensure provision of logistical support, including equipment and vehicles to IPZs
- ensure follow-up in placement of adequate numbers of game scouts and rangers
- ensure smooth implementation by providing follow-up and coordination of support services from administration and other units within the Department;
- carry out overall monitoring of rhino populations in Zimbabwe (including IPZs and conservancies);
- handle public relations issues relating to rhino
- monitor progress of project and report to the Rhino Coordination Group within the Department and act as secretary to that Group;
- participate in the quarterly meetings of the Rhino Conservation Committee consisting of Departmental staff and representatives of NGOs, and assist in the implementation of conservation operations prioritized by this Committee.

The Rhino Conservation Coordinator of the Department will be assisted in his work by his Counterpart, an external consultant seconded to the Department by the International Rhino Foundation. The specific tasks of the Counterpart, external consultant are to:

- facilitate implementation of IPZs;
- draw up explicit, itemized and modular budgets for the IPZs;
- in close consultation with the Veterinary Unit, select an intensive management centre (IMC);
- supervise and coordinate development of the IMC;
- participate in development of (meta)population management plans for rhino on the IPZs;
- assist in selection of a supervisor for the IMC;
- coordinate all conservancies and NGOs involved in conservation activities
- in close cooperation with the Rhino Conservation Coordinator report to the Rhino Coordination Group within the Department on project progress and funding situation, budgets and fund disbursements.

7.3 ROLE OF PROVINCIAL WARDENS IN IPZ AREAS

The Provincial Wardens (PWs) responsible for supervision of areas containing IPZs will be playing a crucial role in the establishment phase. In coordinating placement of game scouts in the IPZs, the Provincial Wardens need to brief their Wardens and place suitable staff in the IPZs by adjusting from existing staff in their areas. In case of additional numbers required, the PWs have to contact the Chief Warden at Head Office and request transfers from other provinces as soon as possible. This administrative work has to begin even prior to fund allocation for IPZs.

Furthermore, they will be regularly attending the Joint Operation Command (JOC) meetings with the armed forces and police at the provincial level to coordinate support from these bodies. Frequent visits from the Provincial Wardens to the IPZs located in their area are essential in the initial phase.

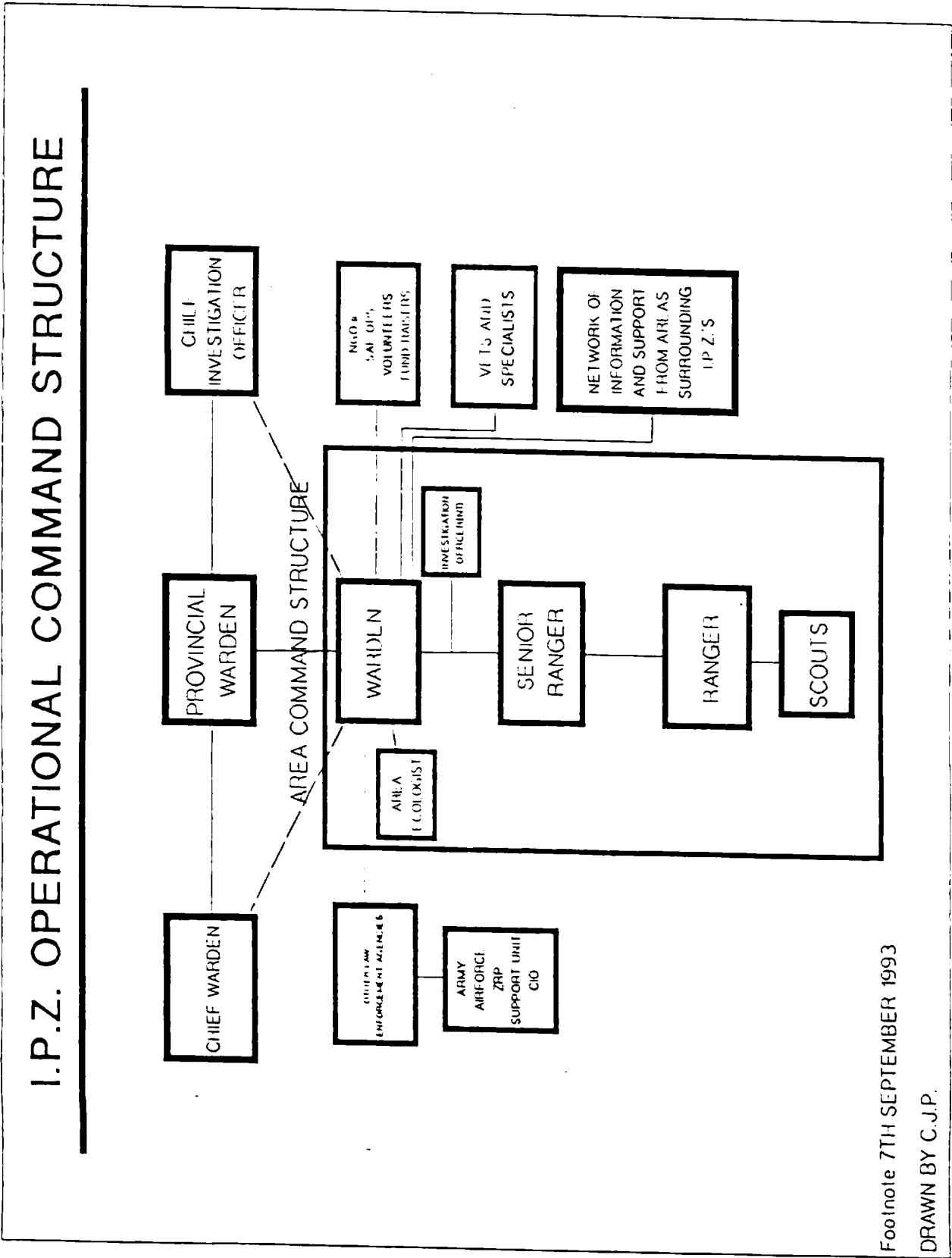
7.4 OPERATIONAL/FIELD LEVEL: ROLE OF WARDENS

At the operational or field level, the Warden in the IPZ will be the Area Manager heading a team consisting of an area ecologist, an investigation officer, and the patrolling rangers and scouts. Although he only has direct line authority over the rangers and scouts, the other members of the team will have to coordinate their operations with the Warden and act as a team and not on an individual basis. Coordination with other law enforcement bodies (army and police), NGOs and volunteers, and a network of information and support from areas surrounding the IPZ is also the task of the Warden. He is responsible for submitting monthly reports to the Provincial Wardens and the Rhino Conservation Coordinator.

The area team in each IPZ is the key to success. Team effort and respect for team rules and mode of team operations are crucial for effective establishment of functioning IPZs. The present role of Wardens in the IPZs will have to change from the traditional, vertically oriented one to that of an inter-disciplinary, team manager.

The operational command structure at the field level is schematically presented on the following page.

IPZ: OPERATIONAL COMMAND STRUCTURE AT FIELD LEVEL



Footnote 7TH SEPTEMBER 1993

DRAWN BY C.J.P.

8. ISSUES REQUIRING CLARIFICATION

The effective functioning of IPZs is dependent on solving management and funding issues that have been identified below:

TRANSFER OF STAFF: PLACEMENT IN IPZs

The Provincial Wardens raised the issue that prior to 1990 the Provincial Wardens had decentralized authority to shift junior staff within their areas of jurisdiction. However, a circular issued by Head Office in 1990 has curtailed their authority to effect transfers of junior staff even within their provinces. Head Office has to clarify whether this placement can be done by the PWs if there is a possibility to adjust junior staff within their areas to fulfil the requirements of the IPZ.

In the past, transfer of staff has involved a lot of internal politics. The issue is whether such transfers can be given effect with the minimum of internal politics, particularly in the establishment phase of the IPZ.

DECENTRALIZED AUTHORITY OF THE PWs AND THE IPZs

The decentralized authority of Provincial Wardens has been undermined. The issue is whether such authority can be restored so that decentralized functions of the IPZ can be effectively carried out in the province without long, bureaucratic delays, particularly in the disbursement of field allowances to scouts, that has sometimes taken up to 11 months. Total and genuine decentralisation in terms of decision-making and financial administration to the project team is a necessary condition for success.

In matters relating to financial administration, two options are available:

- Introduction of imprest A/C system at provincial level for quick payment of subsistence to staff patrolling within IPZs
- Station floating advance cash account for facilitating immediate payment.

APPOINTMENT OF THE RHINO CONSERVATION COORDINATOR

A Rhino Conservation Coordinator has to be appointed from amongst the PWs to serve as project manager having the responsibility for all tasks described in section 7.2 above. The appointment has to be made at the earliest possible date.

ASSISTANT TO CHIEF WARDEN

It is not clear who is second-in-command to Chief Warden at Head Office. Since the Chief Warden bears responsibility for the whole country, an assistant to the Chief Warden is necessary, to coordinate activities and communication between the IPZs in the absence of the Chief Warden.

LOGISTICS

In the past, vehicles have been taken away from the operational level in the provinces to the Head Office. If this practice continues in the future, the IPZs are doomed to failure from the start. Senior management has to ensure that logistics required for operations in the IPZs has absolute priority. The Wardens of the IPZs should be given full authority for deployment of vehicles within their IPZs.

FLEXIBLE BUDGET FOR FUNDING OPERATIONS

The Department has in the past cut down on operations when funds had to be surrendered to the Ministry of Finance. However, operations in the IPZ require continuity in operating funds, without which the whole concept of the IPZ lacks foundation and all efforts to set up IPZs will remain fruitless.

Such a fund can be established through donations from NGOs, a fixed contribution by Government, and deposit of income from the Department's business operations. A portion of this fund has to be invested in profit/interest bearing instruments so that continuity can be maintained in meeting recurrent expenditure of the IPZs.

INDISCIPLINE

In the past there have been cases of indiscipline which were not dealt with swiftly by senior management. If indiscipline is permitted to reign supreme, the concept of an effective IPZ is questionable. Indiscipline, if allowed to continue without the PWs and the Wardens being able to use the disciplining powers given to them, there will be a major management crisis.

9. OPTIONS CONSIDERED

Having discussed all the relevant aspects of setting up IPZs, including cost implications, the following options were considered to be still open for decision-making by Government:

- OPTION 1: Do nothing, which would mean certain extinction of rhinos on Park and Wildlife Estates in Zimbabwe.
- OPTION 2: Translocate rhinos from the Parks and Wildlife Estates to private conservancies and abroad. Once the rhinos are out of Parks Estate, the private conservancies will be the next target of poachers.
- OPTION 3: Choose the 2 smallest defensible IPZs and concentrate on intensive management. This is still an open option in the event that limited funds are available for establishment of IPZs. However, the management objective defined in section 5 above will not be achieved.
- OPTION 4: Establish IPZs in all 4 selected Park areas. The pursuit of this option requires certain tough management and financial choices to be made immediately by the Department of National Parks and the Government of Zimbabwe. Those choices and the need for urgent action has already been outlined above.

Annexes

ANNEX 1 : PRIORITIZATION EXERCISE : SELECTION OF IPZs

PRIORITIZATION EXERCISE : SELECTION OF IPZs

CRITERIA	AREA																												
	A1		A2		A3		A4		A5		A6		A7		A8		A9		A10		A11		A12		A13		A14		
	B	W	B	W	B	W	B	W	B	W	B	W	B	W	B	W	B	W	B	W	B	W	B	W	B	W	B	W	
Suitability of Habitat for RHINO	1	11	11	0	11	0	7	7	10	0	11	0	11	0	8	0	11	0	11	0	7	0	11	0	11	0	11	0	11
Presence of RHINO	1	0	9	0	3	0	9	9	8	0	1	0	0	0	0	0	2	0	0	0	0	9	0	0	0	0	9	0	11
Long Distance from National Borders	4	4	4	0	11		10		4		0		0	8		0		0		0		6		0		10		11	
Friendly/Collaborative Neighbouring Communities	5	5	0	0	0		7		7		2		3	5		0		0		2		6		4		9		8	
Easy Response Possible	1	2	0	0	0		11		8		4		4	1		0		0		9		5		4		11		11	
Effective Patrolling Possible	0	0	0	0	0		10		0		0		0	0		0		0		0		2		0		10		10	
Total Scores	4	31	0	25		54		37		18		18		22		13		22		35		19		60		62		62	
Ranking	2	5	0	6		1		3		9		9		7		10		7		4		8							

KEY

A1	Hwange National Park	A8	Doma Safari Area																										
A2	Chizarira National Park	A9	Chewore Safari Area																										
A3	Chirisa Safari Area	A10	Charara Safari Area																										
A4	Matobo National Park	A11	Chipinge Safari Area																										
A5	Matusadona National Park	A12	Gonarezhou National Park																										
A6	Mana Pools National Park	A13	Lake Chivero Recreational Park																										
A7	Hurungwe Safari Area	A14	Kyle Recreational Park																										
W	White Rhino	B	Black Rhino																										

NOTE: The following were considered insignificant in terms of Rhino population and/or suitability of habitat

- Matetsi National Park
- Zambezi National Park
- Kazuma Pan National Park
- Chete Safari Area
- Tuli Safari Area
- Vumba National Park
- Nyanga National Park
- Chimanimani National Park
- Chegutu Safari Area
- Nyamaneche Sanctuary

ANNEX 2 : EVALUATION OF SHORTLISTED IPZs

EVALUATION OF SHORTLISTED IPZs

	Total Area Sq/km	IPZ sq/km	Carrying Capacity	Potential Population	Actual Rhino Population	Staff Requirement for IPZ			Staff Required for Entire Park		Game Scouts Effectively Patrolling At Present
						Required	In Position	Additional	Without IPZ	With IPZ	
1. Matobo	425	105	1/6 sq km	18	12	11	5	6	21	27	23 for 425 sq km
2. Hwange	14,651	1,300	1/6 sq km	217	113*	65	10	55	121	176	14 for 1300 sq km
		1,700		283		85	14	61		182	
		2,000		333		100	16	84		205	
3. Matuadoma	1,407	500	1/6 sq km	83	13	25	14	11	38	49	15 for 1407 sq km of which 10 for 500 sq km
4. Chipinge	300	150	1/6 sq km	25	9	15	8	7	17	24	14 for 300 sq.km
		+ 150	1/8 sq km	19							
5. Chizarira	1,910	250	1/6 sq km	42	18**	17	6	11	44	55	14 for 1910 sq.km

* Estimate of August 1992

** Estimate of September 1992

ANNEX 2

OVERVIEW OF SHORTLISTED IPZS — Notes on table

1. **Total Area:** Data from the Land Tenure Repeal Act (1979)
2. **IPZ Area:** Approximate calculation from areas drawn on 1:250 000 maps.
3. **Carrying capacity:** Densities recorded for black rhino populations in Zimbabwe in the main areas where rhino were previously well established in 1984 vary from about 1/4km² - 1/10km², depending on habitat type. The areas proposed for IPZs all contain habitats which are considered good for rhino although these preferred habitats do not occupy the entire IPZ area. The values assigned for carrying capacity in each IPZ are therefore slightly less than the maximum achievable in certain prime areas of the Parks and Wild Life Estate.
4. **Potential population:** This is derived from the simple multiplication of IPZ area expressed in km² and carrying capacity expressed in rhino/km².
5. **Actual population:** These figures are taken from the minutes of the Department's Rhino Committee which are updated monthly with the latest information for each area. The data are based on rhinos actually recorded during dehorning operations from 1991 - 1993.
6. **Estimates of required manpower:** These are derived in several stages as outlined below:
 - (a) **Base-line requirement for scouts:** This is the minimum number of game scouts required in the total park area for effective patrolling without consideration of an IPZ. It has been computed using the relationship:

$$No. \text{ of men} = \sqrt{(Area)}$$

where area is expressed in km²

This relationship (Martin's Law) is an empirical fit to data from a wide range of successfully protected areas in Africa.

LISTING OF EXISTING RESOURCES : MATOBO, TOTAL AREA 425 SQ.KM

<u>Staff</u>	Warden	1
	Senior Ranger	1
	Rangers	3
	Senior Scouts	3
	Scout Is	35
	Scout IIs	8
	General Hands	91
	Ecologist (Fisheries)	1
	Foreman	3
	Handyman	1
	Typist	1
	Housekeeper	1
<u>Equipment</u>	CMED 5 - ton Bedford (New)	3
	Land Rover	3 (unreliable)
	Trailer	1 (Operational) 5 (Non-operational)
	Tractor	1 (Operational) 1 (Non-Operational)
	Land Rovers (NP)	7 Non-runner
	Thames	1 (Non-operational)
	Isuzu	1 (Non-operational)
	M/Bus	1 (Non-operational)
	Base sets	- 1 MICOM 100 - 1 Small means (Battery Chargers Required)
	Handsets	10
<u>Housing</u>	Permanent	107
<u>All Weather Roads</u>	- Good network with some tarmac road	
<u>Domestic Water</u>	- Well supplied by a number of dams (pumps unreliable)	

LISTING OF EXISTING RESOURCES : HWANGE, TOTAL AREA 14,651 sq.km

<u>Staff</u>	Warden	3
	Senior Ranger	3
	Rangers	6
	Ecologists	2
	Senior Scouts	5
	Scout II/Is	69
	General Hands	152
	Handyman II	6
	Foreman	1
<u>Equipment</u>	5 ton CMED	5
	4 WD CMED	3
	Motor Cycles NP	9
	Aircraft NP	1
	Land Cruiser NP	1
	Hilux NP	5
	Light Vehicles CMED	1
<u>Radio Equipment</u> (Telephone)	Base sets	3 Maxar 50s 3 Motorola 100
	Handsets	57
<u>Firearms</u>	AK 47/FN	128
<u>Housing</u>	Permanent	29 (Senior Staff) 226 (Junior Staff)
<u>Game Water Supply</u>	- 52 Boreholes	

LISTING OF EXISTING RESOURCES : MATUSADONA, TOTAL AREA 1,047 SQ.KM

<u>Staff</u>	Warden	1
	Senior Ranger	1
	Rangers	3
	Senior Scouts	4
	Scout Is	10
	Scout IIs	7
	General Hands	10 (Ops) 14 (Admin)
	Ecologists	1
<u>Equipment</u>	Lorry (5 ton)	1 (1993)
	Land Rover (NP)	1 (1991)
	Land Cruiser	1 (1992)
	Motor Bikes	2
	Boats	3 (Operating) 2 (Non-operating)
	Toyota Land Cruiser	1 (Non-operational)
<u>Radio Equipment</u> (Telephone)	Base sets	2 National 3 Operational 1 Lake Safety 1 NNWT
	Handsets	13 (Operational) 5 (Non-operational)
<u>Housing</u>	Permanent	32 (Junior Staff) 5 (Senior Staff)
	Tents	10
<u>All Weather Roads</u>	<ul style="list-style-type: none"> - No tar roads - Main access - Fair good internal roads on valley floor 	
<u>Domestic Water</u>	- Lake Kariba	- Good
<u>Game Water Supply</u>	- Good permanent Natural Water	

LISTING OF EXISTING RESOURCES CHIPINGE SAFARI AREA, TOTAL AREA 300 sq.km

<u>Existing Staff</u>	Senior Ranger	1
	Senior Scouts	1
	Scout Is	16
	Scout IIs	2
	General Hands	1
	Total Staff	21
<u>Available Transport</u>	Cycle	1
	Landcruiser Pick Up	1
	Both NP Fleet	
<u>Required Transport</u>	Land Rover	1
	5 Tonner	1
	Equipped Tractor	1
	Fixed Wing Air Craft	1
	Water Bowser	1
	Fixed Wing Air Craft	1
<u>Radio Equipment/Telephone</u>		
- Inconvenient partyline telephone. Radio (Big means) Non-operational - underrepair		
<u>Permanent Field</u>	F15 Junior Staff houses	3
<u>Accommodation</u>	Substandard	2
	Block Accommodation	1
<u>Temporary Field</u>	Officer Houses (Prefab)	2
<u>Accommodation</u>	Office Blocks (Prefab)	2
<u>All Weather Roads</u>	- Only tracks cover the parks estate roads are a priority	
<u>Domestic Water</u>	- Nyautsa Camp	- Equipped and borehole operational
	- Chipangayi Camp	- Borehole equipped with hand pump.
		- Water reticulation to be installed
<u>Game Water Supply</u>	- 2 boreholes have been drilled, to be equipped - 2 boreholes being drilled and to be equipped	

LISTING OF EXISTING RESOURCES : CHIZARIRA, TOTAL AREA 1,910 sq.km

<u>Staff</u>	Warden	1
	Senior Ranger	2
	Senior Scouts	1
	Scouts	18
	General Hands	31
<u>Available Transport</u>	Heavy Trucks (1991 & CMED old)	2
	4WD Pick-up (1990)	1
	Tractor (CMED old)	1
<u>Radio Equipment</u>	Big Means	1
<u>Housing</u>	Permanent Field Accommodation	2 (Senior Staff)
	Temporary Field Accommodation	33 (Junior Staff)
<u>All Weather Roads</u>	<ul style="list-style-type: none"> - No tar - Poor main access - Very poor internal 	
<u>Domestic Water</u>	<ul style="list-style-type: none"> - 2 boreholes, now at capacity 	
<u>Game Water Supply</u>	<ul style="list-style-type: none"> - Sufficient natural water 	

DETAILED COST ESTIMATES

NAME: MATOBO TOTAL AREA: 425km² IPZ AREA: 105 km²

ITEM	UNIT COST \$	UNITS NEEDED ANNUALLY	RECURRENT COSTS			CAPITAL COSTS		
			TOTAL REQUIREMENTS	ALREADY PROVIDED	SHORTFALL	TOTAL REQUIRED	ALREADY PROVIDED	SHORTFALL
1. SALARIES								
Warden	30,485	-						
Ranger/Snr Ranger	24,024							
Snr Scout	9,874	1						
Scout I	8,250	5						
Scout II	6,428	6						
Labourer	5,076	10						
Sub-Total			164,476	164,476	-	-	-	-
2. SUBSISTENCE \$15/night x 15 days/month	2,700	12	32,400	13,760	18,640			
3. INCENTIVES 20% of subsistence	540	12	6,480	-	6,480	-	-	-
4. EQUIPMENT								
5t truck	300,000	-						
4wd vehicle	250,000	2						
Motorcycle	40,000	-						
Tractor								
Handhold radio	3,200	6						
(P110)	3,200	1						
Mobile/base radio								
(GM300)	20,000	1						
Repeater (RICK)	4,000	13						
Patrol gear per man	1,000	13						
Replacement of gear/man/year								
Firearms and ammo								
12 x 600 x 25								
Battery Chargers	653	3						
Ammunition	520/1,000	7,800						
Sub-Total			17,056	2,000	15,056	596,359	260,253	336,106
5. MILEAGE								
4wd vehicle	3/km	24,000						
Sub-Total			144,300	21,000	123,000	-	-	-
6. INFRASTRUCTURE								
Rhino Pens								
Construction	10,000	4						
Sub-Total				-		40,000	-	40,000
7. MAINTENANCE AND REPLACEMENT 20% of capital costs			77,272	-	77,272	-	-	-
8. MONITORING, AIRCRAFT HIRE AND BOMA MANAGEMENT			100,000	-	100,000	-	-	-
TOTAL			541,684	201,236	340,448	636,359	260,253	376,106

DETAILED COST ESTIMATESNAME: HWANGE
SINAMATELLA/DEKA SAFARI AREA

TOTAL AREA: 14 651 sq.km

IP2 AREA: 1300 sq.km

ITEM	UNIT COST \$	UNITS NEEDED ANNUALLY	RECURRENT COSTS			CAPITAL COSTS		
			TOTAL REQUIREMENTS	ALREADY PROVIDED	SHORTFALL	TOTAL REQUIRED	ALREADY PROVIDED	SHORTFALL
1. SALARIES								
Warden	30,485	1						
Ranger/Snr Ranger	26,000	3						
Snr Scout	9,874	3						
Scout I	8,250	33						
Scout II	6,428	33						
Labourer	5,076	30						
Sub-Total			764,887	764,887				
2. SUBSISTENCE								
\$15/night x 15 days/month	2,700	65	175,500	8,000	167,500			
3. INCENTIVES								
20% of subsistence	540	65	35,100	-	35,100			
4. EQUIPMENT								
5t truck	300,000	-						
4wd vehicle	250,000	-						
Motorcycle	40,000	-						
Tractor		-						
Handhold radio (P110)	3,200	-						
Mobile/base radio (GM300)	3,200	-						
Repeater (RICK)	20,000	-						
Patrol gear per man	2,000	-						
Replacement of gear/man/year	1,000	-						
Firearms and ammo	.52	-						
GPS (GEO.pos.sys.)	7,000	-						
P110 (batteries)	500	-						
Radio	120,000	-						
Sub-Total			279,500	81,700	197,800	2,052,400	894,200	1,158,200
5. MILEAGE								
5t truck 1500 km/m	4/km	36,000						
4wd vehicle 2000 km/m	3/km	48,000						
Motorcycle 500 km/m	1/km	30,000						
Sub-Total			318,000	6,000	312,000			
6. INFRASTRUCTURE								
Tents	3,000	16						
3 man prefab house	50,000	16						
Toilet/ablutions								
Borehole	100,000	-						
Sub-Total						948,000	-	948,000
7. MAINTENANCE AND REPLACEMENT								
20% of capital cost			600,080	-	600,080			
8. MONITORING, AIRCRAFT HIRE AND BOMA MANAGEMENT								
			950,000	-	950,000			
TOTAL			3,123,067	860,587	2,262,480	3,000,400	894,200	2,106,200

DETAILED COST ESTIMATES

NAME: MATUSADONA

TOTAL AREA:

1450km²

IPZ AREA :

500km²

ITEM	UNIT COST \$	UNITS NEEDED	RECURRENT COSTS			CAPITAL COSTS		
			TOTAL REQUIREMENTS	ALREADY PROVIDED	SHORTFALL	TOTAL REQUIRED	ALREADY PROVIDED	SHORTFALL
1. SALARIES								
Warden	30,485	1						
Ranger/Snr Ranger	24,024	3						
Snr Scout	9,874	4						
Scout I	8,250	21						
Scout II	6,428	10						
Labourer								
Sub-Total			347,843	347,843				
2. SUBSISTENCE								
\$15/night x 15 days/month	2,700	33	89,100	30,000	59,100			
3. INCENTIVES								
20% of subsistence	540	33	17,820	-	17,820			
4. EQUIPMENT								
5t truck	300,000	1						
4wd vehicle	250,000	1						
Motorcycle	40,000	1						
Tractor	-	-						
Handhold radio (P110)	3,200	15						
Mobile/base radio (GM300)	3,200	4						
Repeater (RICK)	20,000	0						
Patrol gear per man	2,000	15						
Replacement of gear/man/year	1,000	25						
Ammunition 12 x 600 x 25	.52							
Boat Motors	50,000	2						
Sub-Total			118,600	-	118,600	780,800	-	780,800
5. MILEAGE								
5t truck	4/km	2,500						
4wd vehicle	3/km	3,000						
Motorcycle	1/km	500						
Fuel (boats)	3.10/L	14,500L						
Sub-Total			273,500	82,500	191,000			
6. INFRASTRUCTURE								
3 man prefab house	50,000	5						
Toilet/ablutions								
Permanent Housing	70,000	11						
Sub-Total						1,020,000	-	1,020,000
7. MAINTENANCE AND REPLACEMENT								
20% of capital costs			360,160	-	360,160	-	-	-
8. INTENSIVE MANAGEMENT, MONITORING, AIRCRAFT HIRE			300,00	-	300,000	-	-	-
TOTAL			1,507,023	460,343	1,046,680	1,800,800	-	1,800,800

DETAILED COST ESTIMATES

NAME: CHIPINGE

TOTAL AREA: 300km²IPZ AREA: 150 km²

ITEM	UNIT COST \$	UNITS NEEDED ANNUALLY	RECURRENT COSTS			CAPITAL COSTS		
			TOTAL REQUIREMENTS	ALREADY PROVIDED	SHORTFALL	TOTAL REQUIRED	ALREADY PROVIDED	SHORTFALL
1. SALARIES								
Warden	30,485	-						
Ranger/Snr Ranger	26,000	2						
Snr Scout	9,874	1						
Scout I	8,250	9						
Scout II	6,428	14						
Labourer	5,076	6						
Sub-Total			191,500	191,500	-	-	-	-
2. SUBSISTENCE								
\$15/night x 15 days/month	2,700	16	43,200	15,000	28,200			
3. INCENTIVES								
20% of subsistence	540	16	8,600	-	8,600			
4. EQUIPMENT								
5t truck	300,000	1						
4wd vehicle	250,000	1						
Motorcycle	40,000	1						
Tractor		-						
Handhold radio (P110)	3,200	8						
Mobile/base radio (GM300)	3,200	1						
Repeater (RICK)	20,000	1						
Patrol gear per man	2,000	6						
Replacement of gear/man/year	1,000	26						
Firearms and ammo 12 x 600 x 25								
Sub-Total			73,904	-	73,904	650,800	6,000	644,800
5. MILEAGE								
5t truck 1500 km/m	4/km							
4wd vehicle 2000 km/m	3/km	12,000						
Motorcycle 500 km/m	1/km	24,000						
Tractor		12,000						
Sub-Total			132,000	6,000	126,000			
6. INFRASTRUCTURE								
3 man prefab house	50,000	3						
Toilet/ablutions	50,000	1						
Borehole	100,000	1						
Game water supplies	25,000	4						
Sub-Total						400,000	-	400,000
7. MAINTENANCE AND REPLACEMENT								
20% of capital costs			210,000		21,000			
8. MONITORING, AIRCRAFT HIRE AND BOMA MANAGEMENT								
			75,000	-	75,000			
TOTAL			734,204	212,500	521,704	1,050,800	6,000	1,044,880

DETAILED COST ESTIMATES

NAME: CHIZARIRA

TOTAL AREA: 1 910km²IPZ AREA: 250km²

ITEM	UNIT COST \$	UNITS NEEDED ANNUALLY	RECURRENT COSTS			CAPITAL COSTS		
			TOTAL REQUIREMENTS	ALREADY PROVIDED	SHORTFALL	TOTAL REQUIRED	ALREADY PROVIDED	SHORTFALL
1. SALARIES								
Warden	30,485	1						
Ranger/Snr Ranger	26,000	2						
Snr Scout	9,874	1						
Scout I (50%)	8,250	8						
Scout II (50%)	6,428	8						
Labourer	5,076	30						
Sub-Total			362,063	362,063	-	-	-	-
2. SUBSISTENCE								
\$15/night x 15 days/month	2,700	18	48,600	30,000	18,600			
3. INCENTIVES								
20% of subsistence	540	18	9,720	-	9,720			
4. EQUIPMENT								
5t truck	300,000	1						
4wd vehicle	250,000	2						
Motorcycle	40,000	3						
Tractor	-	-						
Handhold radio (P110)	3,200	15						
Mobile/base radio (GM300)	3,200	-						
Repeater (RICK)	20,000	-						
Patrol gear per man	2,000	38						
Replacement of gear/man/year	1,000	54						
Firearms and ammo 12 x 600 x 25	.52	54						
Sub-Total			71,000	-	71,000	1,044,000	40,000	1,004,000
5. MILEAGE								
5t truck 1500 km/m	4/km	18,000						
4wd vehicle 200 km/m	3/km	48,000						
Motorcycle 500 km/m	1/km	18,000						
Tractor	-	-						
Sub-Total			234,000	30,000	204,000	-	-	-
6. INFRASTRUCTURE								
3 man prefab house	50,000	12						
Toilet/ablutions								
Borehole	100,000	12						
Sub-Total						900,000		900,000
7. MAINTENANCE AND REPLACEMENT								
20% of capital costs			388,800	-	388,800	-	-	-
8. MONITORING, AIRCRAFT HIRE AND BOMA MANAGEMENT								
			150,000	-	150,000	-	-	-
TOTAL			1,264,183	422,063	842,120	1,944,000	40,000	1,904,000

ANNEX 5 : SUMMARY OF COST ESTIMATES OF IPZs

ANNEX 5 : SUMMARY OF COST ESTIMATES OF IPZs (Z\$ 1,000)

	TOTAL SALARIES			SUBSISTENCE INCENTIVES MILEAGE			INFRASTRUCTURE			EQUIPMENT			MAINTENANCE AND REPLACEMENT			MONITORING, AIRCRAFT HIRE AND BOMA MANAGEMENT			TOTAL EXPENDITURE	TOTAL SHORTFALL
	TOTAL	SHORT -FALL		TOTAL	SHORT -FALL		TOTAL	SHORT -FALL		TOTAL	SHORT -FALL		TOTAL	SHORT -FALL		TOTAL	SHORT -FALL			
1. Matobo	164	-		183	148		40	40		613	351		77	77		100	100		1178	716
2. Hwange	764	-		529	515		948	948		233	1356		600	600		950	950		6123	4369
3. Matusadona *	348	-		380	268		1020	1020		899	899		360	360		300	300		3308	2847
4. Chipinge	192	-		184	163		400	400		725	719		210	210		75	75		1785	1566
5. Chizarira	362	-		292	232		900	900		1115	1075		389	389		150	150		3208	2746
GRAND TOTAL																			15,602	12,244

NOTE:

*Matusadona assumes 35 animals
Except Chizarira, 4 IPZs were prioritized

ANNEX 6 : KEY

AE	AREA ECOLOGIST
AMC	ANDREW CONYBEARE
AS	ANDY SEARLE
CF	CHRIS FOGGIN
CIO	CHIEF INVESTIGATIONS OFFICER
CP	CHIRS PAKENHAM
CS	CLAUDIUS SAI
CW	CHIEF WARDEN
DDM	DEPUTY DIRECTOR MANAGMENT
DDR	DEPUTY DIRECTOR RESEARCH
DM	DONALD MUTAPE
EA	EVIAN ANDERSON
GN	GRAHAM NOTT
GST	GILBERT S. TAVONA
GT	GLEN TATHAM
GVS	GOVERNMENT VETERINARY SERVICES
HQ	HEAD QUARTERS
HS	HEADMAN SIBANDA
IN	IVAN NCUBE
KH	KLODIAS HOVE
MA	MARK ATKINSON
MK	MIKE KOCK
MTC	MOSES T. CHOTO
NE	NORMAN ENGLISH
NR	N. RUSIKE
OB	ONIAS BEPE
PBCU	PROBLEM BIRD CONTROL UNIT
PW	PROVINCIAL WARDEN
RC	RHINO COORDINATOR
RdT	RAOUL DU TOIT
SR	SENIOR RANGER
TEI	TRAINING, EXTENSION AND INTERPRETATION
W	WARDEN

ANNEX 6: ACTIVITY PLANS

ESTABLISHMENT OF IPZs

1.

ACTIVITY	SPECIFIC RESPONSIBILITIES	DEADLINE FOR COMPLETION	COSTS INVOLVED	STATUS
PHASE I				
- Briefing for all Wardens/PWS in IPZ	<u>PWs</u> <u>Wardens</u> KH NE	- 13/09/93	- No	
- Lists of staff prepared by Warden within IPZ	OB HS	- 13/09/93		
- Lists prepared by HQ	IN NR			
- Check lists and finalize number of scouts available for IPZ within Province	DM CS	- 14/09/93		
- Identify additional staff required and submit request to the HQ for transfers				
- Co-ordinate with H/Q if additional staff is required from other provinces	- CW/PW (HQ)	- End of September, 1993	- No	
- Provide temporary accommodation/Tents	- CW (GT)	- End of September, 1993	- Yes	
- Establish communications	- Warden PBCU (CP)	- Mid October, 1993	- Yes	
- Provide adequate equipment	- CW (GT)	- Mid October, 1993	- Yes	
- Formal briefings of all concerned	- PWs/CW	- Mid October, 1993	- Covered	
- Provide adequate transport (logistics)	- <u>PWs</u> CW OB KH DM IN	- End of October, 1993	- Yes	
- Transfer staff to IPZs	- PWs and all Wardens	- End of October, 1993	- Yes	
PHASE II				
- Training and orientation	<u>Wardens</u> HS NE NR CS	- 1st week of November, 1993	- Covered	
- Establishment of base camps	<u>Wardens</u> HS NE NR CS	- 2nd week of November, 1993	- Yes	

ANNEX 6 : ACTIVITY PLANS

2.

CAPTURE AND TRANSLOCATION

ACTIVITY	SPECIFIC RESPONSIBILITIES	DEADLINE FOR COMPLETION	COSTS INVOLVED	STATUS
<ul style="list-style-type: none"> - Organize and Mobilise: <ul style="list-style-type: none"> - Capture equipment - Medical equipment - Monitoring equipment - Helicopter <ul style="list-style-type: none"> - Pilot(s) - Fuel - Organize and Mobilise: <ul style="list-style-type: none"> - Vehicles - Crates - Sleds - Staff support fixed wing Boma construction 	<ul style="list-style-type: none"> - <u>Veterinary Unit</u> (MK, MA) - <u>Management Unit</u> WARDEN (AS) 			
<ul style="list-style-type: none"> - Capture and translocation to IPZs from outside of IPZ in order of priority 1-5) <ol style="list-style-type: none"> 1. Sikumi Forest to Sinamateka 2. Chizarira/Chirisa to Matusadona 3. Zambezi Valley to Chitake Bomas (Mana Pools National Park) 4. Omay to Matusadona 5. Gonarezhou to Chiredzi River conservancy 	<ul style="list-style-type: none"> - <u>Wildlife Unit</u> (GVS, CF, EA) 	<ul style="list-style-type: none"> - 25/09/93 - 15/10/93 - 1/11/93 - 7/11/93 - 31/10/93 	<ul style="list-style-type: none"> - Covered - Covered - Covered - Covered - Covered 	

ANNEX 6 : ACTIVITY PLANS

3. DEHORNING OPERATIONS

ACTIVITY	SPECIFIC RESPONSIBILITIES	DEADLINE FOR COMPLETION	COSTS INVOLVED	STATUS
<ul style="list-style-type: none"> - Dehorning in IPZs - Matobo - Hwange - Matusadona - Chipinge 	<ul style="list-style-type: none"> - Veterinary Unit MK MA - Mobilise capture equipment, medical equipment and helicopter 	<ul style="list-style-type: none"> - May 1994 - April, 1994 - August, 1994 - October, 1994 	- Covered	- Initial dehorning completed

4. INTENSIVE BOMA MANAGEMENT

ACTIVITY	SPECIFIC RESPONSIBILITIES	DEADLINE FOR COMPLETION	COSTS INVOLVED	STATUS
<ul style="list-style-type: none"> -Hwange -Matusadona -Matobo 	<ul style="list-style-type: none"> - <u>Construction</u> Management Unit and local station staff - <u>Maintenance</u> Local station staff and Veterinary Unit - <u>Local Station Staff</u> Cleaning, feeding, monitoring and cutting browse - <u>Veterinary Unit</u> Health, nutrition and research coordination 	<ul style="list-style-type: none"> - 15/10/93 - 1/10/93 - 1/1/94 	<ul style="list-style-type: none"> - Covered - Covered - Not covered 	<ul style="list-style-type: none"> - Not complete - Not complete - Not yet started

ANNEX 6 : ACTIVITY PLANS

5.

MONITORING

ACTIVITY	SPECIFIC RESPONSIBILITIES	DEADLINE FOR COMPLETION	COSTS INVOLVED	STATUS
RHINO NUMBERS AND DISTRIBUTION				
<ul style="list-style-type: none"> - Develop individual rhino identity files - Park level - National level 	<ul style="list-style-type: none"> - AE - RCI, - AMC 	<ul style="list-style-type: none"> - 31/12/93 	<ul style="list-style-type: none"> - Yes 	
<ul style="list-style-type: none"> - Monthly report on each rhino and quarterly analysis from - Patrol reports - Other sightings - Radio location - Boma records 	<ul style="list-style-type: none"> - AE 	<ul style="list-style-type: none"> - Monthly - Quarterly 	<ul style="list-style-type: none"> - Yes - No 	
ENFORCEMENT EFFORT AND ILLEGAL ACTIVITY				
<ul style="list-style-type: none"> - Design standard system - Patrol debriefing - Quarterly analysis per IPZ - Analysis of poaching trends e.g. - local and crossborder operations - horn prices - modus operandi (national and inter-national) 	<ul style="list-style-type: none"> - CW, RC/AMC - SR - W, AE - CIO (GN) CW 	<ul style="list-style-type: none"> - 31/12/93 - Every patrol - Quarterly - Quarterly 	<ul style="list-style-type: none"> - No - No - No - No 	
COORDINATION; MEETINGS; REPORTING				
<ul style="list-style-type: none"> - IPZ monthly report - IPZ annual report - Annual project report (National Report) - Quarterly rhino committee meeting (National) 	<ul style="list-style-type: none"> - W - AE - RC/AMC - RC/AMC 		<ul style="list-style-type: none"> - Yes - Yes 	

ANNEX 6 : ACTIVITY PLANS

6. COORDINATION AND SECURING PUBLIC SUPPORT

ACTIVITY	SPECIFIC RESPONSIBILITIES	DEADLINE FOR COMPLETION	COSTS INVOLVED	STATUS
- Monthly station meetings	- W AE	- Monthly	- No	
- Neighbour liaison	- W			
- Reward system	- CW PW W	- Formal system in place by 31 December 1993	- Yes	
- ZRP, Army, Airforce liaison	- CW PW W	- Quarterly	- No	
- Volunteer mobilization	- DDM CW RM/AMC	- 31 December 1993	- Yes	
- Material development	- MTC AE W	- March, 1994	- Yes	
- Press media liaison	- DDM DDR	- Ongoing	-No	
- Coordination with NGOs and Donors	- DDM RM/AMC			
- National Rhino Meeting	- RM/AMC	- Annual	- Yes	

ANNEX 7 : LIST OF WORKSHOP PARTICIPANTS

- | | | |
|-----|-------------------------------------|--------------------------------------|
| 1. | Deputy Director | - G.N. Pangeti (2-3 September, 1993) |
| 2. | Deputy Director | - R.B. Martin |
| 3. | Deputy Director | - W.M. Makombe (2-3 September, 1993) |
| 4. | Chief Warden | - G.H.T. Tatham |
| 5. | Rhino Coordinator | - A.M. Conybeare |
| 6. | Veterinarian | - M. Kock |
| 7. | Ecologist (Rhino Conser.) | - R du Toit |
| 8. | PW (Mashonaland West | - O. Bepe |
| 9. | PW (Midlands) | - L. Mungwashu |
| 10. | PW (Matebeland North) | - K. Hove |
| 11. | PW (Manicaland) | - D. Mutape |
| 12. | Chief Executive Officer | - E. Chaibva |
| 13. | Ministry of Environment and Tourism | - M. Mukamba (2-3 September, 1993) |
| 14. | PW Head Office | - G.S. Tavona |
| 15. | Chief Ecologist, (TEI) | - M. Choto |
| 16. | Ecologist (Matusadona) | - M.A. Murphree |
| 17. | Facilitator | - H. Moinuddin |
| 18. | Documatation | - F.T. Gapara |