

Financial values of hippos

The management quotas for hippos in the Caprivi (Table 7, page 43) are based on a population of 900 animals which takes into account numbers of hippo ‘shared’ with neighbouring countries. The quotas are –

Problem animal control: **10** animals (both sexes, animals older than 5 years, no selectivity)

Sport hunting: **5** animals (adult males)

Harvesting: **45** animals (both sexes, all age classes, no selectivity)

When these values are inserted in the population model (page 5), the population growth rate is effectively zero over a period of 100 years. The average values for hippo products which result from the stable age distribution after 100 years are given in the table below –

	Body weight kg	Dressed meat weight (35%) kg	Dressed meat weight (35%) kg	Dry crust skin weight kg	Dry crust skin weight kg	Canine teeth (pair) kg
Trophy hunting	1,695	593	600	88	90	Taken by client
PAC	1,137	398	400	67	70	1
Harvesting	744	260	260	49	50	0.5
			<i>Value</i> USED	<i>Value</i> USED		

The values of meat and skin have been rounded to the nearest 10kg for use in the calculations which follow.

The average value of the animal products in the three categories of management is as follows –

Prices	Dressed meat weight		Dry first crust skin weight		Canine teeth (pair)		TOTAL VALUE	
	US\$/kg	kg	US\$/kg	kg	US\$/kg	kg	US\$	Rounded
Trophy hunting	600	600	90	1,350	Taken by client		1,950	2,000
PAC	400	400	70	1,050	1	100	1,550	1,500
Harvesting	260	260	50	750	0.5	50	1,060	1,000

Note: The price of hippo skin is approximately double that of elephant skin (Parker, *pers.comm*).²⁸
The value of dry elephant skin is about US\$7.5/kg (Mochaba Developments, Pvt Bag 98, Maun, Botswana).

28. Hippo skin is more valuable than elephant skin because it is a stronger leather, has a finer pattern and can also produce multiple splits (a ‘split’ is the process whereby a hide of sufficient thickness is passed between two rollers with a centrally placed fine and sharp band saw so that the hide emerges from the rollers as two hides). Hippo skin is sufficiently thick and solid to produce up to six splits. The top one with the epidermis has the hippo grain, while the five other splits are smooth on both sides without a pattern. The pattern is fixed by making a photographic plate of the grain on hippo hide and stamping it on to all the splits so that they resemble genuine hippo hide. Elephant hide is so loosely fibrous that the splits can be torn in two by hand and, lacking substance, they will not take a pattern. Only the elephant epidermis is tough enough to hold together.

Applying these unit financial values to the quota, the total value of hippo products is shown below.

	Quota (numbers)	Unit value (US\$)	Total value (US\$)
Sport hunting	5	2,000	10,000
Problem animal control	10	1,500	15,000
Harvesting	45	1,000	45,000
			Gross income US\$
			70,000
Operating costs @	US\$100/animal	Operating costs US\$	5,500
			Net income US\$
			64,500
1US\$ = N\$6.3		N\$	406,350

If it were decided to establish a central facility²⁹ for processing hippo meat and hides then the above could be regarded as gross ‘project income’. The operating costs attached to such a project would include killing the hippo (ammunition, hunter time, labour and transport), labour for skinning and butchering at the facility, transport of carcasses to the facility and butchered meat from the facility, replacement of equipment (knives, hooks, racks etc) and salt for curing hippo hides. An arbitrary cost of US\$100/animal has been used above to provide for animals killed as problem animals or harvested. It is assumed that the safari operator would meet these costs for hippo killed as trophy animals.³⁰

The final budgets are presented below. It has been assumed that safari operators conducting trophy hunting will pay one-quarter of the gross income from hunting to the ‘project’ as ‘rental’ for the hunting and that this sum includes the official trophy fees for the hippos.

Safari Operators		Project	
Trophy fees: 5 animals @	US\$5,000	25,000	Net income from products: 64,500
Daily rates: 5 x 2 days @	US\$1,000	10,000	Operator's rental: 8,750
Gross income US\$		35,000	Total net income: 73,250
Operating costs: 5 x 2 days @	US\$200	2,000	
Rental to project: 25% of gross income US\$		8,750	
Net income US\$		26,250	Safari Operators plus Project
			TOTAL NET INCOME: US\$ 99,500

The allocation of the returns to the individual stakeholders on whose land the hippo were killed is shown in **Table 9** on the next page. The quotas developed in this study are compared with the actual quotas for the Caprivi in **Table 10** (page 68).

29. e.g. near Kongola on the Kwando River.

30. For those carcasses arising from sport hunting, it could be made condition of the hunting licence that the trophy does not include the hippo skin or meat. The hunting client wishing to obtain part or all of these products would purchase them from the ‘project’.

Table 9: Allocation of net financial returns from hippo population management*All figures in United States dollars*

	Hippo Numbers	Sport Hunting		PAC		Harvesting		Net Total Income
Net unit values US\$		3,750		1,400		900		
Kavango	247	1	3,750	1	1,400	12	10,800	15,950
Mahango NP & Babwata Western Core	187	1	3,750			9	8,100	11,850
Communal land	60			1	1,400	3	2,700	4,100
Kwando	234	2	7,500	4	5,600	12	10,800	23,900
Babwata Eastern Core	91	1	3,750			4	3,600	7,350
Kwandu	8			1	1,400	1	900	2,300
Mayuni	42	1	3,750	1	1,400	2	1,800	6,950
Mashi	18			1	1,400	1	900	2,300
Mudumu	17					1	900	900
Communal land	58			1	1,400	3	2,700	4,100
Mamili NP	280	1	3,750	1	1,400	14	12,600	17,750
Chobe/Linyanti	128	1	3,750	3	4,200	6	5,400	13,350
Kasika & Impalila	27			1	1,400	1	900	6,050
Salambala	1	1	3,750	1	1,400	1	900	2,300
Communal land	100			1	1,400	4	3,600	5,000
Zambezi	9			1	1,400	1	900	2,300
Kasika & Impalila	4			1	1,400	1	900	2,300
Communal land	5							0
TOTALS	898	5	18,750	10	14,000	45	40,500	73,250

Summary

State Protected Areas	575	3	11,250	1	1,400	28	25,200	37,850
Conservancies	100	2	7,500	6	8,400	7	6,300	22,200
Communal land	223	0	0	3	4,200	10	9,000	13,200
Totals	898	5	18,750	10	14,000	45	40,500	73,250

Table 10: Comparison of present quotas with model quotas*Actual quotas are shown in red font (A)*

	Hippo Numbers	Sport Hunting		PAC		Harvesting		Totals
		M	A	M	A	M	A	
Kavango								
Mahango NP & Babwata Western Core	187	1	4			9		4
Communal land	60			1		3		0
Subtotal	247	1	4	1	0	12	0	4
Kwando								
Babwata Eastern Core	91	1	3			4		3
Kwandu	8			1	1	1	1	6
Mayuni	42	1	4	1	1	2	1	2
Mashi	18			1	1	1	1	2
Mudumu	17					1		0
Communal land	58			1		3		0
Subtotal	234	2	7	4	3	12	3	13
Mamili NP	280	1	2	1		14		2
Chobe/Linyanti								
Kasika & Impalila	27	1		1	1	1		1
Salambala	1		2	1	1	1		3
Communal land	100			1		4		0
Subtotal	128	1	2	3	2	6	0	4
Zambezi								
Kasika & Impalila	4			1		1		0
Communal land	5							0
Subtotal	9	0	0	1	0	1	0	
TOTALS	898	5	15	10	5	45	3	23

Summary

State Protected Areas	575	3	9	1	0	28	0	9
Conservancies	100	2	6	6	5	7	3	14
Communal land	223	0	0	3	0	10	0	0
Totals	898	5	15	10	5	45	3	23