

The Marketing of Elephants and Field-dressed Elephant Products in Zimbabwe

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INTRODUCTION

This paper describes the marketing of elephants, *Loxodonta africana*, and their products in Zimbabwe, against a background of some of the philosophies influencing wildlife and protected area management in this part of Africa. Besides the obvious merits of conserving elephants as a species in their own right, success with the management of the species has come to symbolise the overall effectiveness of wildlife management programmes.

The elephant is an ecologically dominant animal of considerable economic importance which arouses conflicting emotions. While there is still much to learn about its biology, enough is known to irritate classical ecological and protected area management concepts. It is also well known to compete with man for space and, within large secure protected areas, can become a threat to biological diversity if populations build up to critical levels (Cumming, 1981).

As Parker and Amin (1983) have described, ivory trading had a marked influence on African politics for centuries before the "scramble for Africa" took place between the major European powers, mainly during the 19th century. It is not surprising that this has left a deep-rooted, ill-defined and poorly understood mistrust of ivory dealings and their motives in many African minds. For hundreds of years the continent's elephant resources and its people, who were enslaved to transport ivory to the coast, were exploited by outsiders, chiefly from the East. Even now, some countries receive but a fraction of the value of their ivory exports (Martin, R., 1986). Management of elephants in Africa is complicated by emotionalism, lack of understanding and conflicts of interest. There is little reconciliation between the wishes of the rural people, who bear the social costs of elephant damage but who derive few tangible benefits from having the animals on their land, and those that would protect the species for aesthetic or financial reasons. This epitomizes the problems relating to resource allocation and accountability, discussed by Child and Nduku (1986) and elaborated by Child and Child (1986).

Zimbabwe's policy towards wildlife, outside protected areas other than Safari Areas, is that it is a component of the natural ecosystems in which it occurs and like other components should be used on a sustainable basis. Experience in this country has taught that the controlled economic use of wildlife is beneficial to the resource, provided the people who bear the social costs imposed by wild animals also benefit from them and have a say in their management. Where these principles have been ignored, as in the case of some Specially Protected Animals, the conservation of wild populations has run into problems.

Clearly, an ability to market legally acquired products from wild animals is central to this philosophy. Because elephants and elephant products are highly valued, their sale has a positive spin-off effect for other wildlife. Profits can be derived from elephant populations in several ways. The importance of non-

consumptive uses is acknowledged fully, but is outside the scope of this discussion. Here consideration focusses on the marketing of products where management objectives include an element of consumptive use. Within this context it is sensible to seek the highest profits possible for the landholder.

MARKETING

Elephants are a source of food and raw material for manufacture. Ivory is also a bullion and the species is an attractive hunter's trophy. As a trophy, a bullion and the raw material for artists and other craftsmen, ivory sells on at least three distinctive markets, each obeying its own forces, but all compete for the same scarce resource.

Ivory

Ownership of and trading in ivory is strictly controlled in Zimbabwe. Legislation requires the individual marking and registration of every tusk and the licensing of all ivory dealers and ivory manufacturers. These stringent controls aim to curtail illegal practices but facilitate legal ownership and trade, thus allowing elephants to realise their comparative advantage in the competition for space. Domestic legislation is supported by strict adherence to CITES.

Ivory was sold by public tender for many years and the results of sales since 1961 are summarised in Table 1. These data have been updated and differ slightly from those presented by Martin, E. (1984). The tender system with its inherent need for secrecy is alien to the African concept of open government

Table 1. The value of ivory sold by Government tender in Zimbabwe

Year	Month	No. Tusks	Total Mass (kg)	Mean Mass/Tusk (kg)	Price realised	
					US\$	US\$/kg
1961		1 892	11150	5.89	47 158	4.23
1963		1 695	11 342	6.69	44 341	3.91
1965		3 105	16 240	5.23	106 481	6.56
1968		3 156	13 990	4.43	86 176	6.16
1969		2 731	13 299	4.87	63 641	4.79
1969	9	910	4 428	4.87	21 854	4.94
1970	11	922	4 504	4.89	23 139	5.14
1970	2	927	4 483	4.84	27 598	6.16
1972	10	928	4 480	4.88	42 344	9.45
1972	5	1971	8 930	4.53	91 021	10.19
1972	9	3016	8 891	2.95	105 805	11.90
1973	10	1171	1 422	1.21	14 592	10.26
1973	2	c. 112?	150	c.1.34	2 357	15.71
1978	3	3 027	7 500	2.34	258 988	34.53
1978	5	443	3 000	6.77	121 153	40.38
1978	6	1 290	2 836	2.20	143 531	50.61
1982	8	114	1 726	15.14	133 330	77.25
1983	10	2 007	7 000	3.49	264 039	37.72
1983	1	319	1 000	3.13	37 179	37.18
1983	6	344	1 021	2.97	38 084	37.34
1984	10	1 871	6 298	3.37	252 908	40.16
1984	3	1 018	4 000	3.93	180 080	45.02
1984	7	653	4 000	6.13	274 000	68.50
1985	4	1 066	4 500	4.22	283 050	62.90
1985	9	768	4200	5.47	240.061	76.21

and, in the case of ivory, appeared to fuel the mistrust of ivory dealings already mentioned. This method of selling ivory was unavoidable, however, during the 15 years of economic sanctions against Rhodesia, prior to Zimbabwe's Independence.

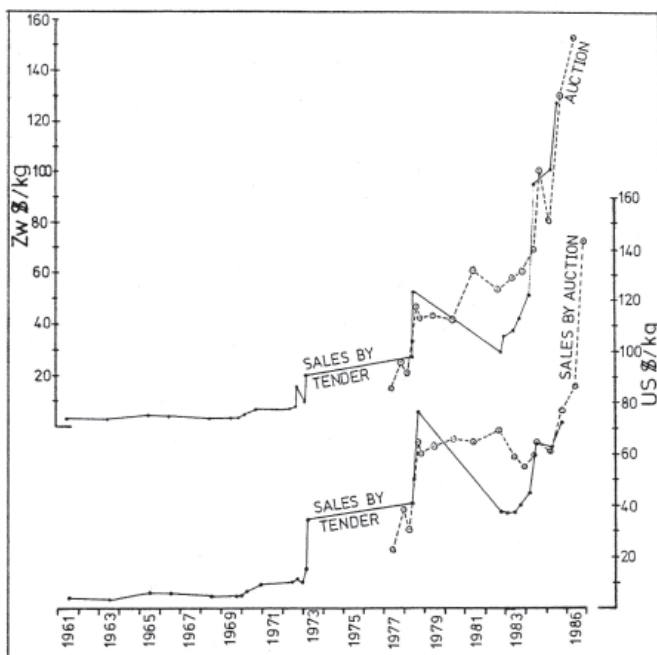
Open auctions were initiated in 1977 (Table 2) in response to the demands of the domestic carving industry described by Martin, E. (1984). There is no long tradition of high quality carving in Zimbabwe, but during the past two or three decades a high degree of artistic excellence has emerged. using ivory or stone. Martin estimated that the annual wholesale value of worked ivory in mid-1983 was about US\$4.55 million (ZW\$8.0 million). He also estimated that this production was based on 15 tonnes of raw ivory, which in 1983 was worth about ZW\$52 per kg or a total of ca. ZW\$780 000 (Figure 1). Martin's estimates suggest an added value, at the wholesale stage, of some 5.8 times the price of raw ivory, increasing to about 10.2 times that value when the carved ivory retailed in Zimbabwe.

While early auctions were restricted to domestic buyers, it soon emerged that there could be no objection to anyone participating in these public sales. Parcels of tusks are now classified as "embargoed" and may be exported only in a worked state, or "unembargoed", when they may be exported as raw ivory. To begin with the great majority of both classes were purchased locally. This, and the fact that Zimbabwe does not permit the import of 'raw ivory, led Martin, E. (1984) to suggest that domestic prices were inflated due to the country's closed economy, the limited availability of foreign exchange and limited raw ivory on the local market. Unfortunately the records for "embargoed" ivory on offer have not been kept separate, except for auctions nos. 14 and 16 in 1985 and 1986. In both cases similar sized exportable raw tusks, paid for in foreign exchange, mostly by foreign buyers, attracted higher prices (Table 2). Figure 1 shows that, although Martin's conclusions may have held from late 1982 to mid-1984, this was unlikely thereafter. By late 1984 prices realised on auctions were similar to those attracted by international tenders, which were suspended in 1985.

The average weight of tusks on offer in Zimbabwe is low (Tables 1 and 2) as much of this ivory emanated from elephant population reduction exercises and the destruction of

Figure 1.

Average prices of ivory per kg obtained in sales by tender and auctions.



problem animals. The small ivory is particularly attributable to the age distribution frequency in Zimbabwe's elephant populations, which are tending to expand, and partly to deliberate avoidance of killing males with large ivory during both types of management actions.

In view of the suggestion of Martin, E. (1984) that domestic ivory prices are warped by characteristics of the Zimbabwean economy, both the ZW\$ and the US\$ values are included in. Figure 1. Similar patterns emerge with differences due to the hardening of the US\$ and the softening of the ZW\$.

Figure 2 examines the average prices paid per kilogram of ivory, sold by auction and tender since 1961 and includes the real prices based on the value of the ZW\$ in 1970, adjusted by the cost of living index for higher income households. Clearly

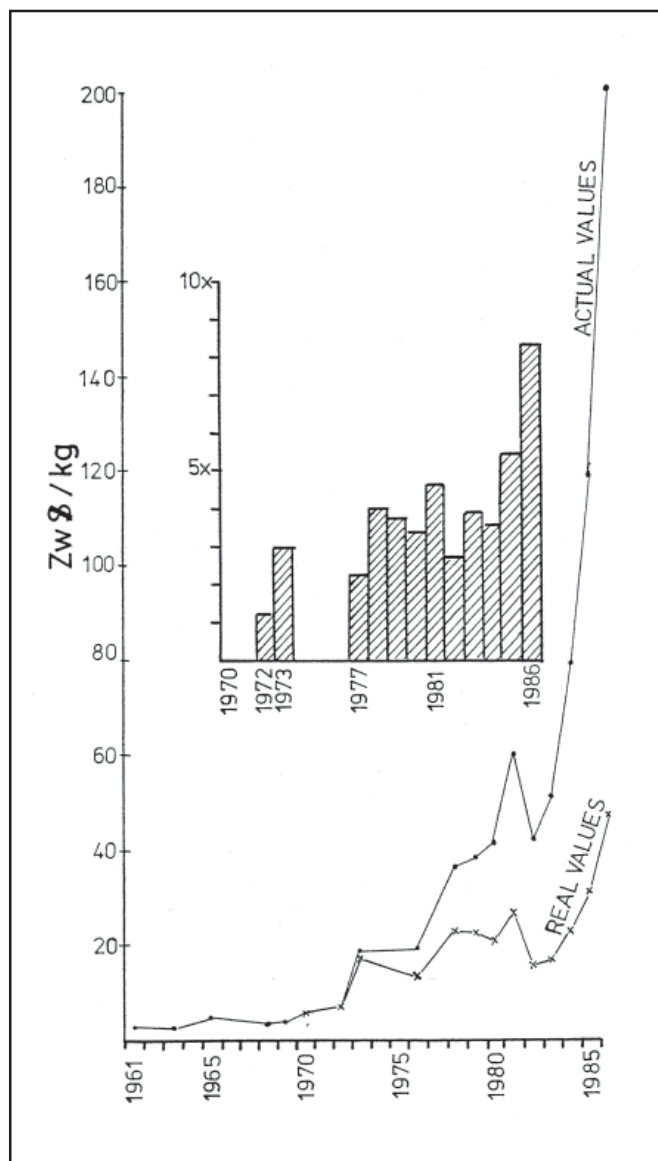
Table 2. The value of ivory sold on auction sales in Zimbabwe

Auction No.	Year	Month	No. Tusks	Mass kg	Mean Mass tusk kg	Mean prices per kg by tusk size										Total Price		Mean Price per kg	
						2kg ZW\$	3kg ZW\$	4kg ZW\$	5kg ZW\$	10kg ZW\$	15kg ZW\$	20kg ZW\$	25kg ZW\$	30kg ZW\$	35kg ZW\$	ZW\$	US\$	ZW\$	(US\$)
1	1977	5	890	3 313	3.7	12	14	15	16	22	19	0	0	0	0	49 120	75 842	14.8	(22.9)
2	1977	11	c.1 073	2 622	c.2.4	0	0	0	26	27	0	0	0	0	66 911	102 110	25.5	(38.9)	
3	1978	3	c. 878	3 339	c.3.8	21	19	20	21	35	35	40	37	0	69 630	102 725	20.9	(30.8)	
4	1978	8		3 436	c.3.9	34	40	41	42	52	50	63	63	0	159 947	237 033	46.6	(69.0)	
5	1978	10	1 409	4 779	3.4	32	33	35	34	58	56	56	69	66	0	201 577	295 188	42.2	(61.8)
6	1979	6	1 706	3 980	2.3	37	40	42	50	60	54	60	65	62	79	171 541	252 142	43.1	(63.4)
7	1980	5	911	4 646	5.1	39	33	36	44	50	47	48	47	69	0	193 752	307 292	41.7	(66.1)
8	1981	6	1 697	7 788	4.5	46	47	47	50	59	68	71	0	0	0	473 667	508 605	60.8	(65.3)
9	1982	9	1 908	8 367	4.4	25	30	35	37	50	64	78	92	107	0	450 198	580 756	53.8	(69.4)
10	1983	6	1 365	3 682	2.7	31	37	42	45	65	85	104	123	143	163	215 032	217 183	58.4	(59.0)
11	1983	11	467	3 952	8.5	27	35	41	46	66	85	103	122	140	158	240 297	218 670	60.8	(55.3)
12	1984	5	1 273	4 104	3.2	25	40	57	68	79	84	92	105	126	0	286 688	243 685	69.9	(59.4)
13	1984	10	646	4 359	6.7	55	67	77	84	110	113	118	123	127	0	439 297	298 722	100.8	(68.5)
14 E)	1985	3	1 758	4 862	2.7	43	51	58	64	93	114	130	143	152	0	392 447	251 166	80.7	(51.7)
14N/E)						77	86	93	98	116	126	136	145	155	0))		
15	1985	10	720	4 410	5.8	69	82	93	102	138	162	178	192	203	0	539 941	318 565	130.4	(76.9)
16 E)	1986	5	1 368	5 698	4.2	100	104	124	134	173	205	238	251	281	302	871 466	496 736	152.9	(87.2)
16N/E)						132	140	148	156	189	240	244	265	292	314))		
17	1986	11	775	5 792	7.4	114	141	164	185	253	213	231	334	351	366	1 435 155	832 390	247.8	(143.7)

E = embargoed Ivory; N/E = non-embargoed ivory.

Figure 2.

Actual and real values of ivory per kg (actual values are prices paid for ivory in the year of purchase; real values are these amounts converted to 1970 ZW\$ values, according to the high income category cost of living index).



the value of ivory sold has increased in real terms since 1970, the relative annual values in those years in which there were sales being indicated in the insert.

As to be expected the value of ivory per kg increased with the sizes of the tusks (Table 2), with the increase rapid for tusks of from 1 kg to 5 kg, but slower for those from 5 kg to 35 kg. Intuitively, an accelerated rate of increase may have been expected in the unit value of larger tusks, due to their scarcity value, but present data were too thin to test this hypothesis.

Hide and other parts and derivatives

For many years little attention was given to the recovery of elephant products other than ivory, although local communities made, and still make, extensive use of the meat whenever it becomes available. Social costs due to damage to crops, stored grain, water supplies and the like were often exaggerated in order to have elephants destroyed for their

meat. This and a desire to hunt elephants among responsible officials was often sufficient incentive for the destruction of many animals, even when ivory prices were low and all financial returns accrued to the exchequer.

Increasing attention has been given to the collection of hide, meat and other products, since the late 1960's, in response to their marketability. Panels of hide of uniform thickness are removed, flensed and salt dried in the field. After being tanned and finished they provide attractive durable leather favoured for such items as high-class footwear, brief cases, ladies' handbags, luggage and golf bags.

Meat is cut into thin strips, brined and sun-dried in the field to provide a highly palatable form of protein, with a substantial shelf life without refrigeration. It is popular with many local people, especially those with a low income. Well prepared feet, for the curio trade, and tails, to provide hairs for personal adornment, are a small but significant contribution of growing importance to the overall value of an elephant carcass.

Child (1983 and 1984) describes the processing of carcasses in the field from elephant reduction programmes and Child (1983) and Child and Nduku (1986) provide estimates of the costs of such operations. At 1986 values these amounted to some ZW\$25 750 (US\$15 450) for the killing, collection of scientific data and ivory, and ZW\$53 830 (US\$32 300) for the recovery and field processing of other products from 1 000 head culled at the rate of 40 animals per day. It thus costs about ZW\$80 (US\$48) to cull and process an average elephant under difficult field conditions in a large but efficient culling operation. This compares with a rough estimate of ZW\$390 (US\$235) to recover and process products from a single large bull shot, for example, on a hunting safari.

Available hide prices are listed in actual and real terms in Table 3, from which it is clear that this is a valuable commodity of growing importance. Until 1986 hide was sold by the Department of National Parks and Wild Life Management on its own account and on behalf of local Communal Land communities by tender. Merchants, professional hunters and others sold both small and larger quantities by negotiation, both inside and outside Zimbabwe where there are restrictions on the export of field dressed hide.

There are reasons to believe that prices remained depressed in spite of an obvious keen interest in a scarce and profitable

Table 3. Average value of elephant products sold by Government in 1976 to 1986

Year	Dry hide/kg		Ivory/kg		Dry meat/kg		Calves, each	
	Actual ZW\$	Real ZW\$	Actual ZW\$	Real ZW\$	Actual ZW\$	Real ZW\$	Actual ZW\$	Real ZW\$
1976						0.78		
1978			36.68	22.93				
1979	3.90	2.17	38.25	21.25			1 051	584
1980	4.02	2.01	41.70	20.85			800	400
1981	3.25	1.41	60.80	26.43	1.40		320	139
1982	3.29	1.22	42.49	15.74			600	222
1983	2.21	0.71	51.63	16.65	1.72	0.55		
1984	3.40	0.95	79.90	22.83	1.90	0.54	700	
1985	4.40	1.16	119.10	31.34	2.05	0.53	900	
1986	15.68	3.73	200.75	47.80	2.75		400	
							1 200	export

Actual = ZW\$ value in year of sale; Real = ZW\$ value in 1970

commodity, because of one or a combination of the following:

- the tender system and a limited local market;
- Government's lack of knowledge of prevailing world market conditions;
- the restrictions on the free export of field dressed hide;
- uncertainty as to the quantity of hide to be sold and the timing of sales each year; and
- the limited number of merchants and tanners, within Zimbabwe, interested in elephant hide.

This is a complex topic. It includes scales of trade, price linkages between elephant, ostrich and crocodile hide, fashion trends and the like. Suffice it to note that with the introduction of the first hide auction in 1986, there was a welcome increase in producer prices, which previously had not maintained their real dollar values in some years.

There is a ready market for fresh elephant meat, but it is usually impracticable to recover and sell it in bulk. Lightly brined sun-dried meat is a much more practical and profitable proposition, although less so than hide. Both fresh meat and hide are highly perishable, so that during carcass recovery there is often need to sacrifice some meat in the interests of the urgency to process hide.

It is policy in Zimbabwe to sell some 50% of the meat from a cull in a protected area cheaply to surrounding people for their domestic consumption, in order to encourage goodwill and a local appreciation for the protected area. While this is an interesting subject with many facets, it is outside the theme of this paper.

Prices realised for other meat, which is still sold by Government in bulk by tender, are indicated in Table 3. They have moved from around ZW\$0.10 - 0.20 per kg in 1971 and 1972 to over ZW\$2.0 in 1985. In real terms this is a 3 to 4-fold increase in 13 years.

In 1982, the Department was able to dispose of some meat, pluck and bones (with meat attached) from a cull, fresh to a contractor who recovered it from the field where the elephants were shot. Prices paid were: meat, ZW\$0.42 (equivalent to ZW\$0.57 in 1986) per kg, or with considerable wastage, ZW\$46.20 per average carcass; bones ZW\$0.04 per kg; and pluck ZW\$0.18 per kg.

During the mid to late 1970s it was not economical to collect and prepare elephant feet for the curio trade, and legs were skinned right down to the soles of the feet. Since about 1983 prices have improved and in 1986 selected field-prepared front feet were worth about ZW\$40 (US\$24) each on the wholesale market. Similar hind feet realised about half this price.

Depending on the lengths and quality of the hairs, salted elephant tails are worth between ZW\$5 to ZW\$25 each, when sold in bulk. It is probable that with more attention, including the selection and grading of hairs, this sum could be increased substantially.

The experience of the Department of National Parks and Wild Life Management in the marketing of elephant products over the years indicates:

- most elephant products are increasing in value in real terms;
- the terms of trade for most elephant products would appear to have remained as favourable or to have been more favourable than those for commonly produced agricultural produce;
- as with most productive enterprises, attention to quality control and the development of markets benefits profitability;

- marketing products by open auction is to be preferred to a tender system and both are preferable to the arbitrary setting of fixed unit prices; and
- the profitable marketing of products requires a thorough understanding of the market and regular information on changing market conditions.

Whole Carcasses

Besides recovering products from elephant population reduction exercises itself, the Department of National Parks and Wild Life Management has called upon contractors to do so. Contracts are awarded by tender and are limited to those commercial companies with the skills and specialised equipment needed. Unless the contractor is efficient and his recovery of products can keep pace with the projected rate of offtake, he will suffer financially and useful raw materials will be wasted to the detriment of the economy; management goals may not be achieved if the culling rate has to be reduced to prevent excessive wastage. The last is especially important as culling has always been determined by the requirements of ecosystem conservation in Zimbabwe, where profitability is a second level consideration.

The contractor is entitled to all the products of the elephant carcasses where the animals are shot, except the ivory which remains state property. For this he either pays a flat rate per carcass or a sliding scale depending on the sizes of individual animals shot. He makes his profit from the sale of the products that he recovers and processes.

Contractors are required to co-operate in the collection of scientific data for monitoring reduction programmes and contracts may require that 50% of the processed meat remains Government property; to be sold cheaply to local people for their domestic use only. The last precaution is necessary as there have been cases where local businessmen have purchased the cheap offer and then promptly sold it at a healthy profit to merchants. This does nothing to benefit local people or encourage their acceptance of a neighbouring park. Employing a contractor to recover carcasses is less profitable to the management authority, but it does -absolve the authority of substantial capital and recurrent costs and the associated financial risks. It also obviates the need to acquire expertise in a range of skills that are more appropriate to the private sector. Provided the interests of the contractor remain strictly subservient to the management objectives of the authority, it becomes a question of establishing the best combination of private and public sector involvement needed to achieve the goals of a particular exercise.

Live Animals

The live animal trade in southern Africa is now big business due to a growing realisation of the value of wildlife and the desire to stock depleted habitats. There is also an increasing number of reputable organisations, such as zoo-parks, that require stock. The capture of calves for these purposes is a valuable source of revenue and a useful means of demonstrating the economic value of elephants.

Recently weaned calves of a suitable size for transportation (i.e. with a shoulder height between 42" and 48") and in the ratio of 1 male to 4 females, find a ready market. Landholders wishing to stock their land, who are not faced with using air transport, will accept bigger animals.

In either case the calves are sold by the Department where they are captured in the field. The purchaser must then

recover the calves, acclimatize them to pens and rear them under field conditions until they can be moved to more permanent quarters.

In Zimbabwe calves are sold for ZW\$600 (US\$360) each to dealers and for ZW\$300 to local landowners. This is less than the ZW\$700 and ZW\$900 charged in 1984 and 1985 and probably less than could be expected on a competitive market. It is, however, substantially more than the carcass values of the animals and it assists the authorities to ensure their welfare after sale. Keeping live animals is expensive and dealers should be permitted a reasonably generous mark-up so that high standards of animal care can be insisted upon. Taking these considerations into account as well as the desirability of stocking large properties in the country with elephants, the Department has preferred modest fixed prices for calves to be exported and even lower prices for those to be relocated elsewhere in Zimbabwe.

Hunters' Trophies

Elephants, especially large bulls with big ivory, are very attractive to high-paying sportsmen and where these people are foreigners this attracts valuable foreign exchange. In Zimbabwe such bulls are sold in two ways. Safari outfitters pay a fixed trophy fee (Figure 3) on behalf of their clients, while other bulls are included in the bags of individual hunts sold to the public direct. Until 1986, when these hunts were auctioned, they were sold by tender and separate bids were invited for the bulls. From hunts with similar quotas, but for an elephant bull, Child (1986) was able to estimate that the addition of the elephant increased the value of a hunt by an average of ZW\$9 509 (range ZW\$6 631 to ZW\$14 860). These "free-market" prices, where available, are also included in Figure 3.

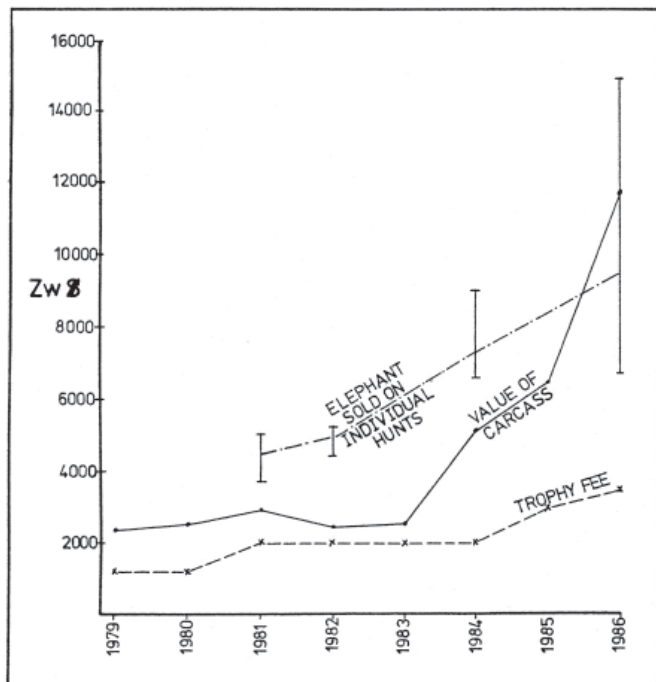


Figure 3.

The prices obtained for an average bull elephant (i) if sold to a safari operator at a fixed trophy fee; (ii) if its products are sold separately at the market values for each product; (iii) if sold by tender to a member of the public for an individual non-commercial hunt ("free-market" price).

With skillful marketing, the opportunity to hunt an elephant can be used to extend a safari by 5 to 7 days. At ZW\$830 (US\$500) per day this adds ZW\$5 000 (US\$3 000) to the trophy fee for the animals, making each bull worth ZW\$10 500 in direct foreign exchange in Zimbabwe. The safari hunting industry was worth something over ZW\$6.0 (US\$3.8) million in 1985 and the industry claims, with merit, that this figure would have been much lower without elephants. Selling expensive hunting would have been much more difficult on highly competitive international markets, and the effects of this would have extended beyond those safaris offering elephant trophies. It has been estimated that each elephant bull attracted some ZW\$42 000 (US\$26 000) worth of business.

Animals sold on individual hunts to members of the public, who may be either residents of Zimbabwe or foreigners (the latter paying for their hunts in foreign exchange), attract more than the basic price bid at the auction. It has been estimated that participating in these 14-day hunts costs the hunter at least ZW\$150 (US\$90) per day in travelling and other incidental expenses and these costs are much greater if the hunter has to hire vehicles and equipment. A portion this additional ZW\$2 100 per hunt, which benefits the economy at the local and national level, is attributable to the elephant trophy, over and above the average of ZW\$9 509 paid for the right to hunt it.

Thus, there is little difference in the direct income generated, whether a bull is sold to a safari client, or on an individual hunt to a member of the public. If the availability of a bull is in fact worth ZW\$42 000 in foreign business to the safari industry, then the main disparity lies between the, greater return it can earn in foreign exchange by being reserved for a safari client and the reduced benefits (ZW\$4 000) that this will produce for the landholder selling it.

DISCUSSION

The fact that elephants and elephant products sell on different—markets, and the importance of elephants to the overall wildlife industry, pose many dilemmas for the wildlife manager. Both the spirit and the word of the Parks and Wild Life Act, 1975, favour the producer receiving a fair return from the correct use of his wildlife. This is necessary if the resource is to achieve its comparative economic advantage and to compete successfully for space with other systems of land use.

For most species the trophy fees exceed the carcass value so that, with the addition of services charges for guiding and the like, recreational hunting 'becomes an ecologically and economically efficient way in which to use wild populations. With the high carcass value and relatively low trophy fees applicable to elephants in Zimbabwe, this does not apply to elephant populations.

Some 89% to 96% by value of the products from a trophy class bull can be exported in the field dressed state. This destroys any argument that the added return in foreign exchange from using a bull for safari hunting justifies the prejudice of the landholder and a breach of the spirit of the legislation. On the other hand, selling safari hunting is the most feasible marketing strategy for the increasing number of ranchers and peasant communities converting from a livestock economy to a wildlife economy. This trend is highly desirable for wildlife and for human welfare in Africa, especially in those large parts that are

suited Only to pastoralism and wildlife.

An obvious solution would be to increase elephant trophy fees to above their carcass value, but the safari industry claims that this would be counter-productive. There would be strong market resistance among international sportsmen who, although coveting tusks as trophies, view them as just that, ignoring their intrinsic value as ivory. Conversely the high prices paid for elephant bulls on recent open markets in Zimbabwe suggest that the market resistance may be less severe than anticipated by the safari industry.

Government reactions anywhere tend to be in response to popular outrage. Safari clients are viewed as among the richest people in the world and many emanate from wealthy countries in the North. It should not be surprising if their investment in ivory was seen to be at the expense of some of the poorest people in the world. Such a situation, is too close, for comfort, to the age-old foreign exploitation of Africa's elephants and her people.

The problem is exacerbated by the fact that producers and the national economy could be seen to benefit more from selling elephant bulls differently. This results from:

- the rather intangible advantage to all safari hunting of being able to offer elephants on a few hunts; and
- a general lack of appreciation of the significance of hunting in promoting economic wildlife management and its potential to assist Africa out of its present environmental and economic dilemma.

For example, on the surface there is every advantage, in reserving the ivory presently taken by safari clients and directing it to the domestic carving industry. This enterprise pays producers better prices and employs local craftsmen to enhance the value of the raw material at home. Zimbabwe can presently harvest around 50 bulls a year on a sustained basis, worth ZW\$525 000 in direct earnings from safari clients (trophy fee + service charge). If each animal yielded 50 kg of ivory this offtake would provide 16.7% of the carvers' annual needs of 15 tonnes and would be worth ZW\$1.3 million in potentially exportable finished ivory. In this regard the carving processed by craftsmen and the trophy sold by the professional hunter are analogous finished products in the form desired by the market. If this were not so, safari clients would be less reluctant to sell their trophies.

Obviously this example is an over-simplification to illustrate the different markets on which ivory sells, but which nevertheless influence each other. Carvers and safari hunters actually tend to complement each other to the advantage of ivory prices. While craftsmen make extensive use of small ivory and some favour cow ivory hunters seek the biggest bull ivory available.

This discussion seeks only to define better how to sell elephants and their products to best advantage to the country. Answers are elusive and solutions will probably emerge from the marketplace provided this remains free of artificially imposed constraints. It must also remain sensitive to the interests of the producer. Likewise, if 50 elephant bulls really do generate foreign safari business worth ZW\$2.1 million, then this fact should be substantiated and publicised. Such information could be vital in evolving a rationalised, diversified national marketing strategy aimed at optimising the return from the resource.

The rising value of elephants, in the main due to rising product prices, is in the best interests of the species. Already it justifies increased emphasis on elephant management at the national level. When these improved financial returns benefit local people, offsetting the social costs they now bear and providing a profit, elephants will be in a strong position to compete for space and hence to survive in numbers outside protected areas.

REFERENCES

- CHILD, B. and CHILD, G. (1986). Wildlife, economic systems and sustainable human welfare in semi-arid rangelands in southern Africa. FAQ/Finland Workshop on Watershed Management, Maseru. (In press).
- CHILD, G. (1983). Elephant Culling and Carcass Recovery within the Parks and Wildlife Estate in Zimbabwe. Mimeo. Departmental report. 26pp.
- CHILD, G. (1984). Managing wildlife for people in Zimbabwe. In: McNeely J.A. and Miller K.R. (Eds). National Parks Conservation and Development —the Role of Protected Areas in Sustaining Society. Smithsonian Institute Press, Washington. 825pp.
- CHILD, G. and NDUKU, W.K. (1986). Wildlife and Human Welfare in Zimbabwe. FAQ report FO:AFC/WL: 86/6.2:1-15.
- CUMMING, D.H.M. (1981). The management of elephant and other large mammals in Zimbabwe. In: Jewell, P.A., Holt, S. and Hart, D. (Eds). Problems in Management of Locally Abundant Wild Animals. Academic Press, New York. 360pp.
- MARTIN, E.B. (1974). Zimbabwe's ivory carving industry. Traffic Bulletin, 6 (2): 33-38.
- MARTIN, R.B. (1986). Establishment of African ivory export quotas and associated control procedures. In: African Elephants, CITES and the Ivory Trade. CITES Secretariat report.
- PARKER, I. and AMIN, M. (1983). Ivory Crisis. Chatto and Windus, London, 184pp.

