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# The Ivory Trade and the Future of the African Elephant

## SUMMARY OF THE INTERIM REPORT OF THE IVORY TRADE REVIEW GROUP

### Introduction

The African elephant is severely threatened by ivory poaching. All attempts to cut the trade to sustainable levels have been futile and hampered by a paucity of information on the trade. But the problems facing the elephant have no simple solution.

The Ivory Trade Review Group came into being in mid-1988, as a result of an initiative taken by Wildlife Conservation International (WCI). The Group first met in Nairobi in July 1988 and established the scope of the work it would undertake, how this would fit into the wider issues of elephant conservation in Africa, and which organizations would be principally involved in the studies. The Group had a second meeting in Nairobi in November 1988, immediately after the first meeting of the CITES African Elephant Working Group.

The main institutional participants in the Ivory Trade Review Group are the AERSG of IUCN, the TRAFFIC network, WTMU (the Wildlife Trade Monitoring Unit of the World Conservation Monitoring Centre, Cambridge, UK) and the CITES Secretariat. The review involved 35 specialists working on different aspects of the ivory trade.

Core funding for the work came from two principal sources, Wildlife Conservation International and World Wildlife Fund. Additional funds for particular aspects of the work have come from the U.S. Department of the Interior, Fish and Wildlife Service (Intra African Trade Studies), from the African Wildlife Foundation (the effects of poaching on elephant herd composition), from WWF (the ivory trade in India) and from the European Economic Community! WWF African Elephant Conservation Programme (database on elephant numbers and trends). A number of parts of the work of the Group are still in progress. These will be completed to produce a Final Report in time for the CITES Conference of the Parties.

The following is a summary of the ITRG's preliminary findings and recommendations. The Main Report, detailing those parts of the Group's investigations which have been completed, was presented to the African Elephant Working Group on 5 July 1989.

### The Fall in Elephant Numbers

The African elephant has declined in numbers by at least 50% in the last ten years. In 1979 there were estimated to be at least 1.3 million elephants in Africa. In 1987 the figure had dropped to 750,000. Estimates coming in now from work under way in the rainforests of Gabon, Congo, Zaire and Cameroun and from the great Parks of East Africa, suggest that today's figure is about 625,000. No more authoritative figure is available from any other source.

Of those that remain 45% are to be found in the rainforests of Central Africa, 31% in Southern Africa, 21% in East Africa and a mere 3% in West Africa.

The downward trend is closely correlated with the adequacy of protection. Only 1.5% of the elephant's total range of six million sq. km. lies within strictly guarded and adequately financed protected areas. Where the wildlife service is underfunded, elephants are killed inside, as well as outside, the reserves and National Parks. In East Africa, for example, 56% of elephants inside parks and 78% of those outside them have disappeared in the past ten years.

### The Effect on Elephant Herds

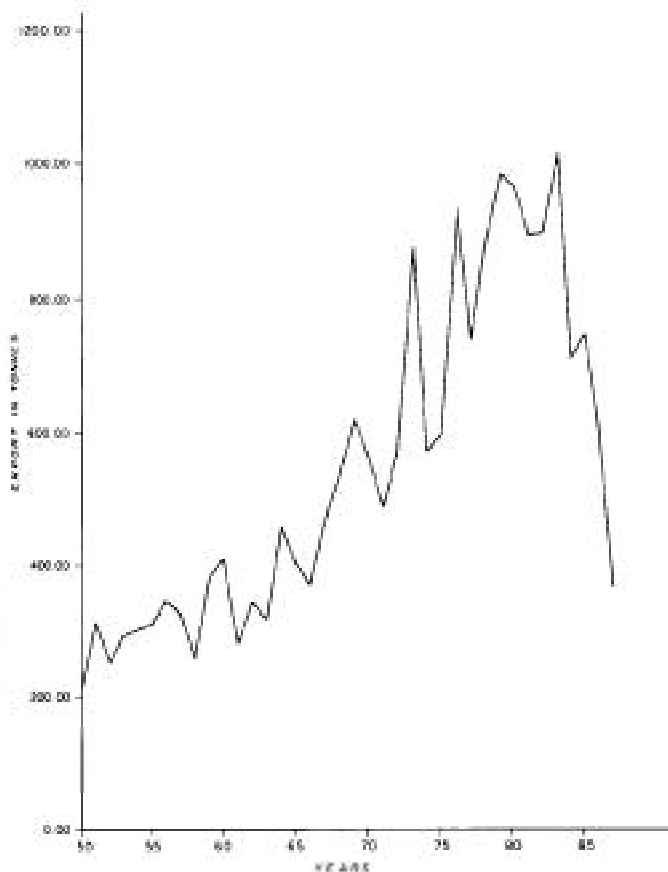
The pursuit of bull elephants for their ivory has been so intense in some areas that they now comprise less than 5% of adult elephants. There is now evidence that in places where bulls are so rare, a female is likely to come to oestrous without being detected by a male. Such missed mating opportunities depress the reproductive rate of the population.

With most of the bulls gone, the hunting pressure turns on the females and immatures, which are now producing most of the tusks coming out of Africa. As the females are killed, so their calves are left to die after them: deaths of orphans may now account for up to one in three of all elephant fatalities. Successful elephant society depends on leadership of family groups by mature matriarch females; in one Tanzanian population only 15% of families now have such leadership, compared with a norm of 75%. These radical disruptions in the family and reproductive structure of the herds may be as important in determining the future as the simple decline in numbers.

### Ivory Exports from Africa

Africa has produced increasing quantities of ivory over each of the last four decades. An annual export of around 200 tonnes in the early 1950s rose to around 900 tonnes by 1979, a level that was maintained for seven consecutive years. With the disappearance of the big males, the mean tusk size declined rapidly, which meant that ever larger numbers of ever younger elephants had to be killed to supply the same tonnage. For example, with a mean tusk weight of 9.8 kg in 1979, a tonne of ivory was made possible by the deaths of 54 adult elephants, most of whom at that time were bulls; in 1987, with a mean tusk weight of 4.7 kg, a tonne of ivory would have come from 113 elephants and a further 55 would have died as orphaned calves, yielding no ivory. The quantity of ivory exported dropped to around 600 tonnes in 1986, to half of that in 1987 and to less still in 1988. The 300 tonnes produced in 1987 represented the deaths of almost as many elephants as the 900 tonnes produced in 1979.

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**Fig. 1.** Minimum annual volume of raw ivory exported from Africa between 1950 and 1987,

The countries which have exported the largest quantities of ivory are Sudan, Burundi (which has no elephants), the Central African Republic and Congo, each of which exported over 900 tonnes between 1979 and 1987. Most of this was undoubtedly ivory from neighbouring countries, particularly Zaire and Tanzania. The illegal ivory trade has preoccupied conservation bodies throughout Africa and the consumer nations for decades. Despite the concern, the ivory trade has flourished, at least in part because some African nations have argued that ivory generates important revenue for conservation. One result is that the government controlled legal trade is virtually indistinguishable from the illegal traffic.

## The Effects of the Trade

Mathematical models have been used to predict what will happen to Africa's elephants in the coming years. They are based on the best possible information about elephant numbers and population structure and on the recorded numbers and weights of tusks exported from each country.

The non-linear models show that, if the average rates at which the populations were hunted between 1985 and 1987 were maintained, the numbers would have dropped to half their 1987 levels by the end of the century. Further, an increase in the rate of harvesting of as little as 10% per year could reduce the halving time to seven years, and virtual extinction would come in 15 years. If present hunting levels were simply kept up, extinction might take as much as 50 years.

The models were used to predict all the different ways in which reduced levels of hunting, and other measures such as minimum permissible tusk sizes, might be used to bring the off-take under control. The effect of the present system, in which voluntary quotas are set by African countries, was explored, again on the basis of 1985-1987 data. It can be shown that the predicted 1989 mortality will lead to a halving of the continental population in about seven to eight years; even a halving of the present death rate would lead to a halving of the population in under 15 years. The hunting toll, currently averaging around 10% of the living population per annum across the continent, would need to be reduced to 1-2%, at most, for the present numbers to stabilize. The sustainable level of ivory production, with populations in their present state, does not exceed 50 tonnes per year for the whole of Africa.

These predictions are based on data which are not perfect, but whatever adjustments one makes, such as increasing or decreasing by 25% the estimated number of elephants and/or the volume of ivory leaving Africa, the general conclusion is the same: exploitation of elephants to supply ivory, as currently practised throughout most of the continent is quite unsustainable. It should be added that all of the biases in the model are on the conservative side and that in some southern African countries, notably Zimbabwe and Botswana, where elephant management is adequately financed, the situation is different.

To be realistic, we cannot assume that individuals will stop hunting elephants simply because scientists have shown that the off-take is not sustainable. There is considerable evidence today to substantiate the view that it is hunting for ivory to supply the trade, and not habitat loss or human population increase, that is responsible for the severity of the drop in elephant numbers. Consequently, nothing other than the most radical solution is likely to stem the decline. This is more easily said than done.

## Africa and the Ivory Trade

What is ivory actually worth to Africa? Optimistic views of this have been one of the main reasons for justifying the continued existence of the trade. A comprehensive analysis of export volumes from each country, at the year's current international price for raw ivory, shows that the apparent value of African exports dropped from over US\$ 60 million in 1979 to some US\$ 37 million in 1987, despite the doubling of the price in that time. But this does not mean that African governments see anything like that amount of revenue. Evidence from African customs statistics show that ivory is usually declared at about 10% of its true value; although elephants belong to the state virtually everywhere in Africa, ivory is almost always sold by private individuals; albeit more ivory now appears to leave Africa with valid documentation than previously, the circumstances of its apparent legitimacy are often clouded with suspicion.

Only in one African country has ivory ever represented a significant proportion of export earnings; 10% of Central African

Republic's export earnings came from ivory in one or two years. This was mostly the ivory of elephants from neighbouring countries, a pattern that is repeated again and again across the continent, frequently because of the strengths and relative convertibility of the currencies of adjacent states. Only in one or two countries in Africa is there an authorized local carving industry that is supplied by ivory legitimately obtained in that same country. Clearly, the contribution of such an industry will not show up in tables derived from the export value of raw ivory; on a continental scale, the value is small. In most countries, the value of ivory to the export economy is rarely greater than one percent. This fact is very important, since the perpetuation of the ivory trade is often justified by its value to African economies. Ivory only achieves its true worth to African governments in those rare countries where elephants are adequately managed, and where ivory revenues are directly invested in wildlife conservation.

### The Other Values of Elephants

It is not only because of ivory that elephants are valuable. Their economically unqualified value to ecosystems is immense. Rampant poaching of elephants is affecting the biological wealth of Africa's savannas and forests for elephants play a vital role in dispersing seeds and creating a patchwork of habitats, ensuring a diverse variety of plants and animals in the process. While their sustainable value to African economies through tourism is not at present calculated it may turn out to exceed, in just one country, the value of ivory for all the range states together.

### The Demand for Ivory

The major demand for raw ivory over the last ten years has been in Hong Kong and Japan. The ivory that is carved in Japan is mostly sold there and stays there; Japan is now the world's largest consumer of ivory. Hong Kong is the centre of the world's ivory trade, but much of the ivory carved there is re-exported, principally to Japan, the USA and Europe. The markets in Japan, in particular, serve a demand that has many centuries of tradition behind it, and will not change without major alterations in public attitudes.

In recent years, on its way to Hong Kong and Japan the ivory has often been passed through a number of staging posts, such as Dubai, Singapore, Macao and Taiwan, each of which has been chosen for the convenience of some legislative loophole. This is a practice employed by certain unscrupulous traders. The ivory trading associations in both Hong Kong and Japan have been at some pains to comply with each successive new set of international and national restrictions. Analyses of the economics of the demand for ivory in Japan indicate it is rising out of proportion to the rises in real incomes. In other words, as Japanese people get richer they have a relatively high requirement for ivory. By contrast, the demand is relatively insensitive to increases in price. These two results argue against trying to curb the want by the imposition of high import tariffs or retail purchase taxes. Analysis of demand in Hong Kong shows that

it is not very responsive to price increases. The Hong Kong picture is less clear-cut than that of Japan because of its major role as re-processor and re-exporter of ivory. Interest and exchange rates both affect demand, but they are irrelevant in the context of the search for policies for the control of the ivory trade. Economic evidence suggests that ivory has not been a particularly promising hedge against inflation; analysis of trade confirms this.

### Trade Structure

The Group investigated the state of the ivory trade in several consumer nations including Hong Kong and Japan, as mentioned above. A remarkably consistent pattern emerges of a declining trade. Detailed questioning showed this is partly due to changing public attitudes, particularly in Europe and the USA, to buying ivory, and partly due to improved procedures for the control of the trade. Traders and retailers are generally aware of the decline of the African elephant populations, but not of the present gloomy prognosis. The number of traders, carvers and retailers, as well as the output of carved ivory, is decreasing everywhere. In Hong Kong and China the industry reports diminishing stocks, in part because of the rapidly rising prices.

Our economic analysis of the long-term rise in Japanese demand shows it to have been insensitive to price rises, but growing with Japanese incomes. Nevertheless, questioning in Japan shows that demand has started to decline over the last three years. The central fact is that it has not yet dropped nearly enough.

### Policy Options

The Group has investigated the legal, economic, commercial and biological options for reducing the trade to levels that bring it within the biological limits of sustainment. Critical issues are: the enforceability of any proposal, the corresponding investments in elephant management. Consideration as policy

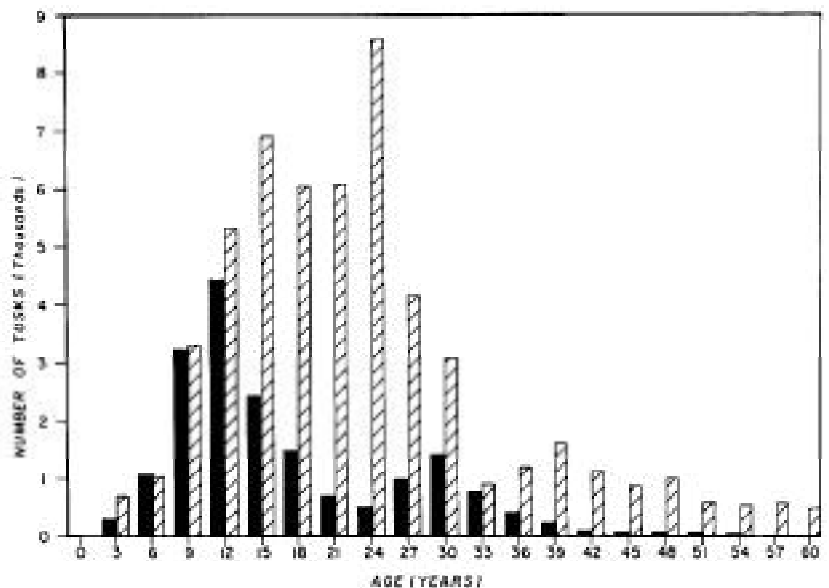


Fig. 2 . Age structure of heaving hundred (level 1) populations calculated from tusks granted CITES export permits between 1986 and 1988. Male:Female sex is assumed to be 15:85. Black is male, hatched is female.

options was given to each of: Appendix I listing, Appendix II with zero quotas, improvements to the CITES control procedures, taxes and tariffs, Ivory Producers Cartel, an Enforceable Producers Agreement.

The Group recognizes that a ban, not associated with incentives, will fail to conserve the supply and manage the demand. A ban may provide as much encouragement, through raising prices, to expand the trade as to constrict it.

Critical to the success of any measure must be concerted efforts at unity of purpose by all African range states, and equally concerted efforts to restrict demand in present and potential consumer countries. The intermediary countries, trading in raw ivory or processing it, are of less importance. The economic self-interest of states required to limit their ivory trade, must be realistically designed into any programme to accompany a ban.

The management of the trade, the predominantly illegal character of the ivory that enters it, the clear predictions about the future of the elephant population and the equally clear economic indications that demand in the main consumer countries is likely to rise steeply as wealth increases, have led the Ivory Trade Review Group to the conclusion that the trade is not operated in the interests of the African elephant, which is consequently threatened with extinction throughout much of Africa unless radical measures are taken in its favour.

The Group recognizes that there are populations of elephants, in a small number of range states, that appear at present not to be threatened, but considers that the interest of the species as a whole, throughout the continent, is the primary concern. The long-term aim of elephant conservation in Africa, and of all the many other aspects of habitat and species management that this implies, must be to re-establish substantial and stable populations, as a basis for tourism and, where appropriate, sustainable harvesting of ivory and other products. Short-term costs must be borne, and not by Africa alone, if these long-term

goals are to be met.

## Conclusions

In order to arrive at preliminary conclusions about the appropriate course of action that might be adopted at the next Conference of the Parties to CITES, the ITRG convened a two-day meeting at the Nuffield Foundation in London, on 22-23 May 1989.

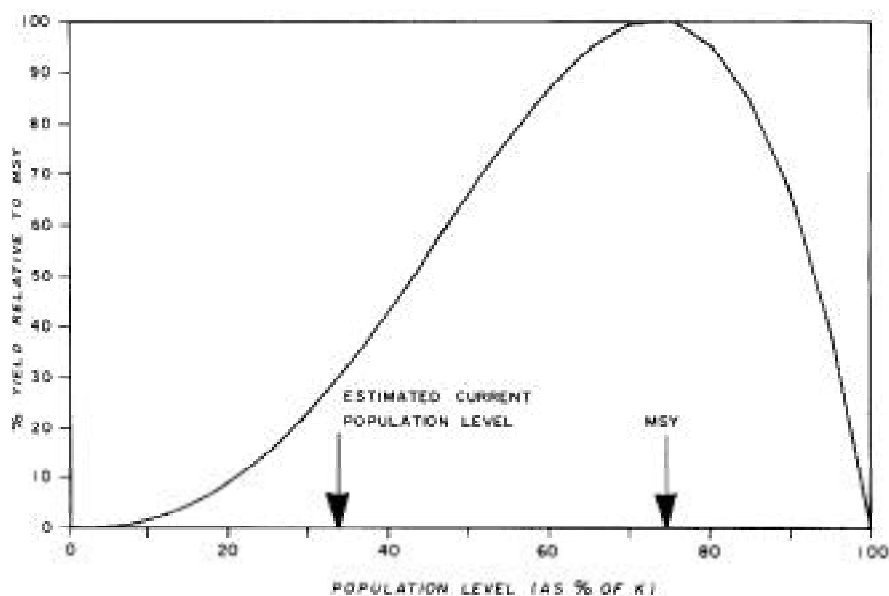
The meeting was attended by representatives of each of the four original institutional members of ITRG (IUCN/AERSG, WTMU, TRAFFIC and CITES Secretariat), by representatives of all but one of the bodies that had funded the studies and by the majority of the individual participants in the studies. The major themes that are described in each of the preceding sections of this report were presented verbally to the meeting by the principal authors. This presentation included a summary of the policy options.

The Group could not fail to be impressed by the implications of the population modelling. The extreme gravity of the situation throughout the majority of Africa, not only in terms of numerical decline but also in terms of the collapse of the reproductive potential of elephant herds, convinced people from all disciplines of the need to take drastic, continent-wide action.

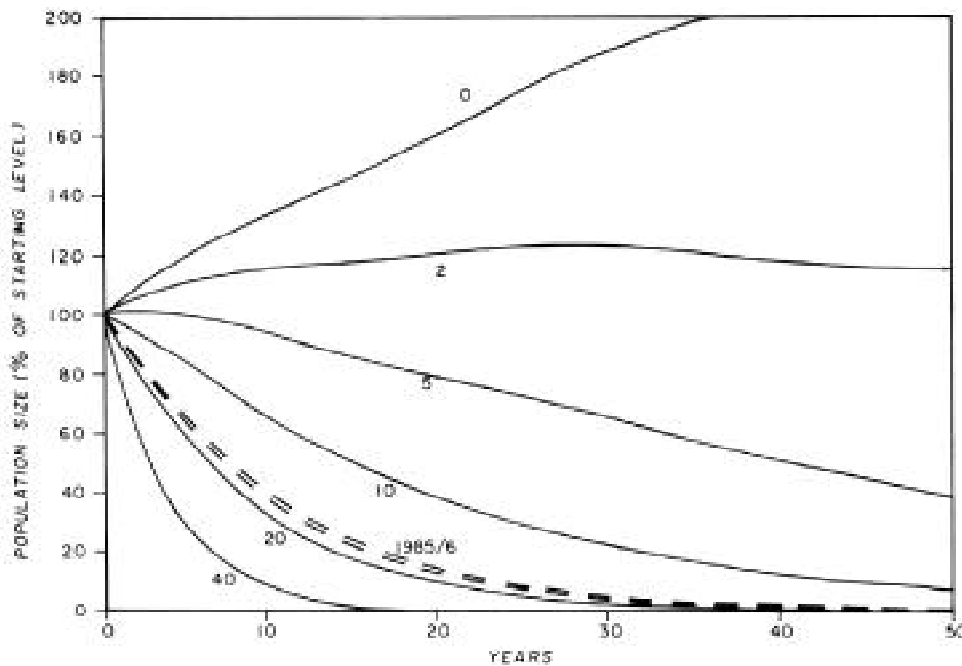
The means whereby the Group arrived at consensus was that, in the first half of the meeting, each person present was asked to give his views on whether or not an Appendix I listing for the African elephant was an appropriate solution for its conservation, within the context of the juridical competence of CITES. Nobody present believed that Appendix I alone would transform the prospects for the elephant, nor would it halt the illegal trade in ivory. Within that context, everybody voiced their misgivings on one aspect or another of the problems associated with an Appendix I listing.

Nevertheless, in a free expression of personal standpoints, all but two were prepared to agree that an Appendix I listing was the appropriate solution to the continental problem.

The two who refrained from expressing an opinion were staff members of the CITES Secretariat, who stated that they were as concerned as anybody to try to ensure the conservation of the elephant and that if the Parties to the Convention resolved that this should best be done by means of an Appendix I listing, they would do their utmost to serve the will of the Parties. They also expressed their doubts about the certainty of purpose of at least one African state that had submitted an Appendix I proposal but had also submitted an export quota for 1989. Finally, they made it quite clear, that as servants of the Parties, they should not try to influence the Parties' right to decide for themselves what was the most appropriate course of action.



**Fig. 3.** Estimated current yield in ivory is approximately one third of maximum sustainable yield due to heavy over-hunting.  $K$  is carrying capacity.



**Fig. 4,** Projections for heavily hunted (Level 1) populations under different levels of hunting mortality. Dashed lines show projections assuming a continuation of the 1985 and 1986 hunting intensity.

Having made the decision that the right course was to recommend an Appendix I listing, the Group devoted the rest of its time at the meeting discussing, in four working groups, the consequences of a listing and the solutions that needed to be found to concomitant problems. These are outlined on the recommendations, which appear below.

## Recommendations

Having reached the conclusion that, problems notwithstanding, Appendix I was the proper course to follow, and having discussed the implications of it, the Group felt that it would be generally helpful if it made an unambiguous statement of its position, on the basis of the conclusions it had thus far reached.

Accordingly, it issued a statement on 1 June 1989, in which it recommended:

1. The transfer of the African elephant to Appendix I of CITES.
2. An immediate, voluntary, suspension of external trade in ivory, imposed by all States capable of doing so, pending the outcome of the October Conference.
3. An immediate global publicity campaign urging people throughout the world not to buy ivory.
4. Provision of additional financial aid to African countries for elephant conservation, on the shortest practicable time-scale.
5. Raising of a new fund for elephant conservation by the conservation bodies principally concerned, especially to support public awareness campaigns but also to assist practical conservation measures on the ground.
6. Intensification of the programme of implementation of the African Elephant Action Plan drawn up by WWF, WCI, IUCN and the EEC.

The reasoning behind these recommendations

- which must be seen as constituting a single package, with short-term and long-term components - needs brief explanation.

The transfer of the African elephant to Appendix I of CITES is proposed because no other measure is sufficiently unambiguous to clarify the law enforcement situation in trading centres around the world. The Group also believes it to be the only immediate way to bring home a clear message to the ivory-buying public in the major consumer nations. It also believes that the criteria for transfer to Appendix I are satisfied.

The immediate voluntary ban on trade is proposed because it is already clear, from the recommendations made to CITES, that the legitimate international trade in ivory is very likely to be halted in the near future. Whatever the outcome of the debate on this issue at the 7th Conference of the Parties to CITES next October, the ivory trade throughout the world is already aware of the likelihood of a ban. The recommendations of the Group will add to the already considerable political weight behind this call for change. In the five months between now and the Conference, and in the 90 days that will elapse between any Appendix I listing adoption by the Conference and its coming into effect, we may expect an unprecedented movement of ivory around the world. Traders will be trying to get rid of stocks, and manufacturers, particularly in Hong Kong and Japan, trying to acquire them. The price of ivory is likely to rise rapidly. It is hardly conceivable that this will not, in its turn, stimulate unprecedented poaching efforts. The immediate voluntary ban offers the best practicable hope of damping down this pressure and closing loopholes as fast as possible.

The immediate global publicity campaign is needed to alert people throughout the world to the seriousness of the situation, and to the reasons why they should not buy ivory. This is particularly important, and sensitive, in the Far East. It is a very substantial task, which needs to be done with the utmost urgency and professionalism. In the longer term, publicity is also needed in order to influence demand, which will not lightly disappear, particularly in Asia. Techniques for driving ivory out of fashion in Europe and North America are well known, but scarcely tried in Asia. They will require money, imagination and skill. This is evident from the fact that the use of rhino horn - which lacks the centuries of art and cultural tradition that is vested in ivory in Asia - has not been stopped by rendering the trade illegal or seeking to reduce demand by persuasion.

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**Additional financial aid is needed:**

- to assist African wildlife, customs and enforcement departments to cope with the expected increase in poaching and ivory trafficking over the coming months
- to co-ordinate and carry out a massive global campaign to reduce demand
- to improve monitoring and surveillance, including the compilation, from existing sources, of a comprehensive trader database, in anticipation of the closure of the trade
- to support a universally acceptable conservation programme that serves, indirectly to offset the potential lost revenues from ivory sales, and to return national populations to stability; this task has already been started by the African Elephant Conservation Co-ordination Group.

A co-ordinated plan is needed because of the worldwide nature of the trade and continent-wide need for conservation.

In Africa the biggest strategic change must be to assist Governments to realize the far greater economic benefits that accrue from long-term conservation, such as tourism and, in some countries, safari hunting, rather than mining elephants for their ivory. A strategic approach to this, on a continental scale, has been laid out by WWF, WCI, IUCN, the EEC and others, in their African Elephant Action Plan. The benefits of this plan would go far beyond the interests of just the elephants. To make sense of the strategic approach to elephant conservation, an African Elephant Conservation Agency is required, based in Africa, to co-ordinate the action, the science and the monitoring of the illegal trade that will certainly continue. This needs to be set in place without delay.

The current proposals should be seen as no more than the beginning of a long and difficult process. There is no quick solution to the problem of the ivory trade and its effects on elephant populations. All the actions cited above will need to be continued if the species, and all the ecological and economic benefits associated with it, is to be sustained. This will require commitment and money. An Appendix 1 listing must be seen as the beginning of a new commitment to elephants and the countries that support them. It must not be an end in itself.

The effectiveness of an Appendix 1 listing will in part depend upon the unanimity of the trading states. If Parties to the Convention take Out a Reservation on this species, as they are entitled to do, much of the potency of the legislation will be lost, since a Reservation means that they would be entitled to continue uncontrolled trade in ivory. This would give the ivory trade a continuing legitimacy in the eyes of consumers and would doubtless ensure that those countries became conduits for other nations' illegitimate ivory. The same effect would be had by trade between those countries that have not signed the Convention, the non-Party States. It follows that the worldwide publicity campaign proposed above must also seek to influence all governments to move in unison, in relation both to CITES listing and co-ordinated action to deter illegal marketing of ivory and other elephant products. To compensate for lost revenue, there must be a massive increase in support to wildlife management authorities. National and donor governments, and conservation agencies, must act fast to make this possible. Donor governments and conservation agencies must be prepared to invest in elephant conservation to a level that generously exceeds that value of the unrealized ivory benefits.

There are genuine risks in the approach proposed here. Making the trade illegal will drive it underground and transfer revenues from governments to criminals. Market prices may rise to reflect scarcity and the higher costs of operation. Only a vigorous, well-financed, united programme of action can hope to succeed. But the Group concludes that to persevere with the present inadequate approach is to make the extinction of the world's greatest land animal inevitable.

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