

TRAFFIC NETWORK 1997

ON A KNIFE'S EDGE

THE RHINOCEROS HORN
TRADE IN YEMEN

ESMOND BRADLEY MARTIN,
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A TRAFFIC NETWORK REPORT



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Front cover photograph: Yemeni man wearing a rhinoceros horn *jambiya*.

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ON A KNIFE'S EDGE:

The rhinoceros horn trade in Yemen

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and Crawford Allan

WWF/Southern African Tourist Corporation



Southern White Rhinoceros *Ceratotherium simum simum*

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INTRODUCTION

This report looks at the centuries-old trade in rhinoceros horn from Africa to Sanaa, Yemen's capital, where handles for the traditional dagger, the *jambiya*, are made. This is followed by a discussion of the effect of this trade on Africa's rhinoceroses. Yemen's attempts to ban the rhinoceros horn trade, including the pressure exerted on Yemen by other governments and organisations over the years, is also presented. Yemen's contemporary role in the rhinoceros horn trade is updated and examined based on a survey in late 1996 by TRAFFIC.

From data gathered in Yemen on the rhinoceros horn trade since 1978, and during survey work in late 1996, a comprehensive review of Yemen's import and consumption of rhinoceros horn is given, and efforts to stop the trade are documented. This report aims to inform all those concerned about Yemen's involvement in the rhinoceros horn trade: the Yemen Government, non-governmental organizations (NGOs), the media, and Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), participating in the tenth meeting of the Conference of the Parties to CITES in Harare, Zimbabwe in June 1997.

TRAFFIC's investigations of Yemen in late 1996 was undertaken to document and update information on the illegal rhinoceros horn trade, and investigate if horn was indeed still entering the country. Some information on the *jambiya* industry required clarification, and any changes that may have evolved concerning the demand for *jambiyas*, the prices of *jambiyas* with rhinoceros horn handles, cultural awareness, economic development, and other relevant factors were important to ascertain. Information was obtained through meetings with Government representatives, diplomats, traders, academics, and others, and through fieldwork. TRAFFIC also aimed to determine the level of compliance with the Yemen Government's 1992 Ministerial Decree enabling inspections of the *jambiya* workshops. If such inspections were being carried out, it was important to ascertain whether new rhinoceros horn or pieces of rhinoceros horn had been revealed and whether any trader or craftsman had been prosecuted for infringing the law. If such action had not occurred, it was crucial to encourage the Government to implement its Decree in order to curtail the trade in rhinoceros horn.

Concerted attempts had been made to encourage Yemen to join CITES since 1982, but with little response. In July 1995, the Director General of the CITES Secretariat led a delegation with WWF to Yemen, in an attempt to encourage the Government to join and control the illegal trade in rhinoceros horn. Since this time, however, there has been little follow-up to determine what progress was being made towards joining the Convention. Meetings with Government officials were also carried out in Yemen between 23 November and 8 December 1996 in an attempt to meet this goal. The Government was encouraged to become a Party to the Convention before the next meeting of the Conference of the Parties to CITES in June 1997. As a result of these discussions, under Yemeni law decreed on 5 January 1997, the way was set for Yemen to become a Party to CITES, bringing hope that the situation would improve with added outside assistance and greater government action. However, it was explained to the Government of Yemen that failure to join before June could result in heavy criticism in the international forum and media. Conversely, joining could bring positive publicity and possibilities for funding and training schemes to help Yemen establish CITES and further its own conservation efforts. At the time of writing, however, Yemen had yet to become an official CITES member.

The results of this research are important to promote discussion on the continuing problem and to provide an informed and accurate representation should the issue be raised at the CITES meeting in June 1997. The recommendations in this report are largely based on information collected in Yemen in late 1996 and

collated with past findings. The recommendations aim to assist Yemen in efforts to halt the illegal rhinoceros horn trade in the country and to encourage Yemen to finally accede to CITES, while benefitting all those African states which still have rhinoceros populations.

BACKGROUND

Use of rhinoceros horn in Yemen: the *jambiya*

Central to an understanding of rhinoceros horn trade in Yemen is an appreciation of the over-riding reason for its demand. Rhinoceros horn is not sought for medicinal purposes in Yemen, as in East Asian communities, but for the manufacture of an artefact which for centuries has been the most potent symbol of Yemeni culture — the *jambiya*. In turn, an awareness of the significance of the *jambiya* for Yemeni people is therefore integral to any study of the trade in rhinoceros horn in Yemen.

Jambiyas are dagger-like knives with curved blades, worn daily by many Yemeni men as part of their traditional dress, and whose origins in Yemeni culture date back thousands of years. In Sanaa's National Museum is a fifth or sixth century B.C. bronze statue of a man with a *jambiya* tucked into his belt. An archaeologist who saw the statue just after its excavation in Mareb in the eastern part of Yemen in the 1950s. wrote that the *jambiya* was similar to those still in use some 25 centuries later (Phillips, 1955).

Before the collapse of the royalist state in 1962 (see Yemen's political history), a particular type of *jambiya*, or the way in which it was worn, was a sign of one's precise status in society. Traditionally, the *Qadis* (judges) and *Sayyids* (descendants of the Prophet Mohammed) wore their *jambiya* to the right, while those of moderate social standing wore it in a central position, and those of lower status to the left. Those who could not claim tribal origin, or who were of low social status, were not supposed to wear a *jambiya* at all.

In the present day, former social distinctions have been relaxed throughout Yemen, and anybody may now wear a *jambiya*, nonetheless, it continues to be a sign of social status and cultural significance. The Yemeni tribes, of which there are hundreds, are very traditional, and some of their leaders are extremely powerful and wealthy. Yemenis generally are proud of their traditional dress and way of life, and many townspeople like to emulate the rich tribal leaders, by wearing *jambiyas* and taking qat - the unprocessed leaves of *Catha edulis*, which are chewed, and are a mild and highly popular stimulant. Even those who do not wear a *jambiya* daily, generally possess one to be worn at weddings and other special occasions, and *jambiyas* vary in size so that even children as young as five may wear them.

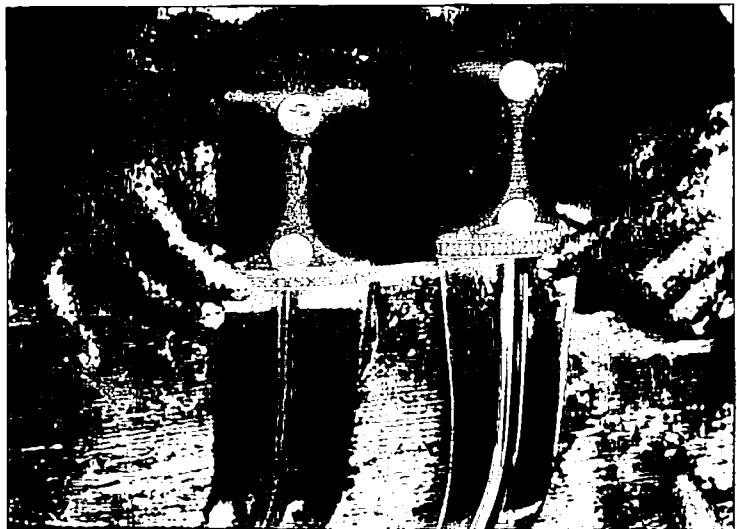
Almost all *jambiyas* are now worn positioned centrally on the body around the waist, regardless of social standing. Traditional Yemenis form the majority of society and to them, the quality and value of a *jambiya* is significant and denotes a person's wealth. The quality of the blade, sheath, belt and handle decorations are all important, but the most prestigious element of a *jambiya* is a good rhinoceros horn handle. Indeed, the *jambiya*'s main purpose is decorative rather than as a weapon, and using it to fight is a rare and serious crime. Ironically, it is said that a man will kill for this weapon whose significance is largely symbolic. Its importance for the great majority of Yemeni men cannot be understated.

Jambiya handles of rhinoceros horn

Jambiya handles can be fashioned from a variety of materials, including domestic Indian Water Buffalo *Bubalus bubalis* horn, camel nail *Camelus dromedarius*, plastic and wood, but rhinoceros horn handles are the most prized. Considered both beautiful and durable, rhinoceros horn is worked by only the most skilled craftsmen of *jambiya* handles, who earn twice as much as those using cheaper materials, and may

take anything from half a day to three days to complete one handle. The first known written reference to rhinoceros horn as a substance for making *jambiya* handles does not appear until the 1950s, when the physician to the Imam in Taiz noted the translucent quality of the carved horn (Fayein, 1957). The fact that there is no known written reference to rhinoceros horn handles prior to this is surprising, since horn has been imported into Yemen for centuries. It is believed that Ethiopians may have brought rhinoceros horn with them when they invaded in the fourth century and that "the manufacture of rhinoceros horn daggers has been pursued in Yemen for at least 750 years and may antedate the arrival of Islam in the seventh century" (Varisco, 1987). It is possible that earlier records of rhinoceros horn *jambiyas* are not found owing to confusion over the origin of the horn: rhinoceros horn is even today sometimes presumed to come from giraffes by many Yemenis, including academics, who confuse the *zarafa* (Arabic for giraffe) for rhinoceros (Elgood, 1994).

It is the special properties of rhinoceros horn that attract craftsmen to use it and purchasers to covet *jambiyas* made from it, rather than any captivation with the rhinoceros itself (Varisco, 1987). The horn is prized for its sturdiness and durability, and *jambiyas* made with it last for generations if properly cared for. Indeed, such *jambiyas* are increasingly venerated with age as horn which has been handled over many years develops a unique patina, called *sayfani*, and an amber-coloured glow when held to the light. These properties are considered beautiful and thus an old



Two old rhinoceros horn *jambiyas* in Hodeidah, Yemen.

and much-handled rhinoceros horn *jambiya* is of special worth. Apart from the characteristic lustre of well-worn rhinoceros horn handles, the hairlines running through rhinoceros horn enable those knowledgeable about *jambiyas* to discern handles made of genuine horn.

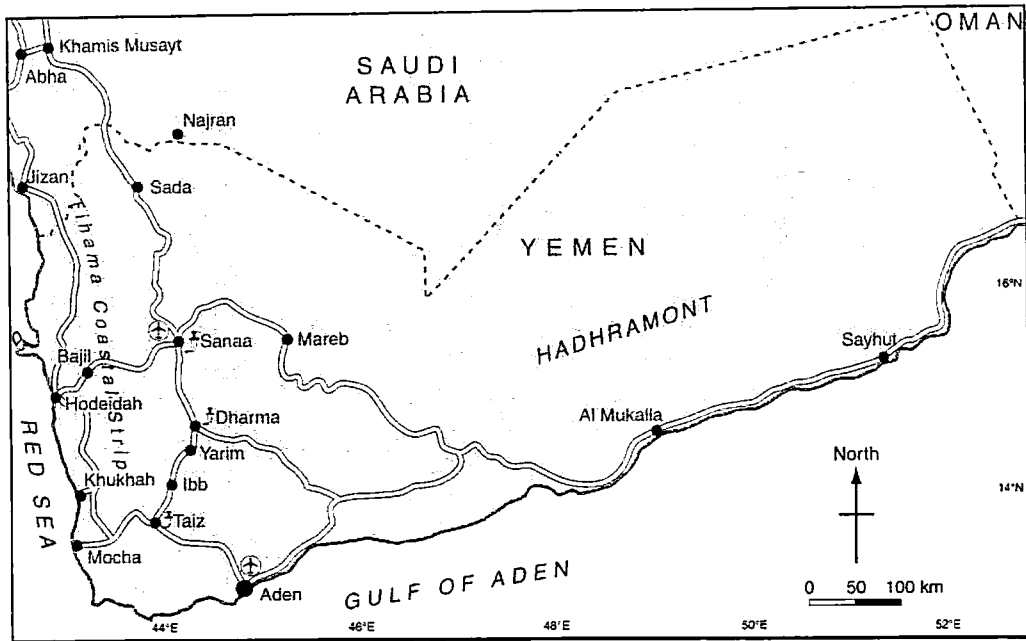
Three average-sized *jambiya* handles can be made from a rhinoceros horn weighing 1.5kg. About five handles can be made, however, from a 2kg rhinoceros horn and for this reason the larger, anterior horns of African species are preferred and more valuable. Rhinoceros horn handles normally weigh from 100g to 200g and thus over 60% of a horn is shed as chips and shavings by the carver, the percentage being greater for smaller horns.

Jambiya handles of other substances

In 1982, when rhinoceros horn imports were banned in Yemen, the main traders and manufacturers of *jambiyas* — a Yemeni family in Sanaa — tried to promote an alternative by importing caramel-coloured plastic handles from Hong Kong for US\$0.30 each. The *jambiyas* with these handles were initially sold for the same price as those with rhinoceros horn handles, but the plastic handles cracked and so became unpopular. Other plastic handles, imported from Syria for US\$0.60 each, have been used since 1985. Shiny and orange in colour, *jambiyas* with these handles can only be sold cheaply, and for little profit. In 1993, about 25 000 of the 150 000 *jambiya* handles estimated to have been made in Sanaa that year were said to have been plastic. The majority of *jambiya* handles, however, are made from the horn of domestic

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Yemen and neighbouring countries



Indian Water Buffalos. In 1993, 120 000, approximately 80% of all handles made in Sanaa that year, were of buffalo horn.

Camel nails are sometimes used for *jambiya* handles in Sanaa, Taiz and Dhamar. They are imported from Saudi Arabia for just under US\$1. Craftsmen dislike working with camel nails as they are difficult to shape into handles, need to be heated, bent and glued, and having an unpleasant smell. From one nail, one or two handles can be made. Like rhinoceros horn, the finished handle has hair lines running through it; they appear as straight lines, lacking the



Close-up of rhinoceros horn (left) and camel nail *jambiyas*.

hatching effect of rhinoceros horn. It is estimated that in 1993, 5000 *jambiya* handles, or just over 3% of the total number of handles made in Sanaa that year, were of camel nail.

Handles covered in silver were popular particularly before the departure of the Jewish silversmiths in 1948 and are commonly sold along with silver sheaths and sometimes silver belts. Amber was occasionally seen in Sanaa's *souk* (the traditional market place). Around Shabwa in southern Yemen, ivory was sometimes used for handles before the *jambiya* workshops were closed by the Marxist regime after 1967. Camel bone was also used in South Yemen. Recently in the north, gold has been used for a few handles for sale in Sanaa. Wood is also crafted to form handles for daggers of the cheapest and poorest grade. In recent years semi-precious stones such as agate have been utilised but these are expensive and have a small market, conservationists have attempted to promote the substance as a suitable alternative to rhinoceros horn.

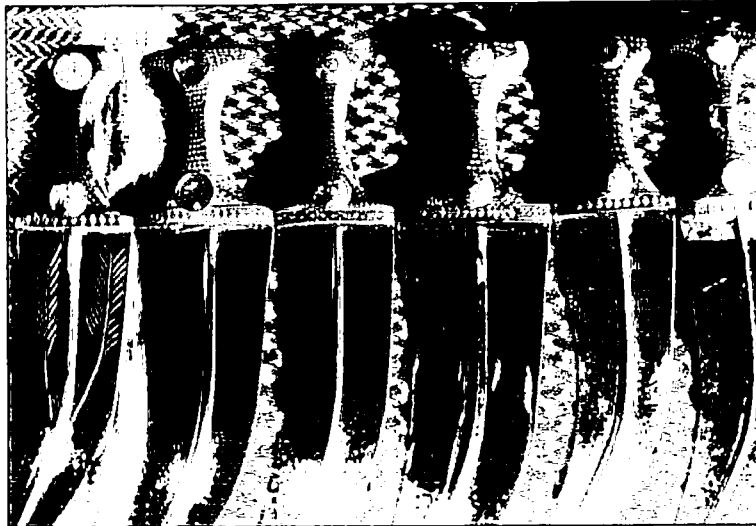
Crafting jambiya handles

Most *jambiyas* are made in one part of the old Sanaa *souk*, *souk al Janabi*, where *jambiya* sheaths, usually attached to belts, are also sold, in separate small shops. Close by are the *jambiya* retail sellers. In the *souk*, craftsmen tend to specialise in one of the separate stages of *jambiya* production. One craftsman usually heats an oblong cut-piece of horn to make it more malleable, then files and polishes it with sandpaper. Another craftsman drills tiny holes on the front and inserts small pieces of wire into the holes for decoration. A third worker heats the handle again, and in the case of buffalo horn, may soak it in a yellow liquid dye to make the handle paler in colour, like rhinoceros horn. When the handle is dry, the same craftsman uses a damp cloth with ash on it to polish the handle. A fourth makes a slit into the base of the handle and fits the blade. He then adds a decorative metal or silver strip around the base of the handle, fastening it with glue. He drills a hole at the top and bottom of the handle in which he inserts a pin to hold a decorative gold, copper or brass coin at each end. Plain brass coins are manufactured in Yemen, and embossed coins are imported from Egypt and Syria. The best handles are decorated with two hand-made Yemeni gold coins. A fifth craftsman completes the final stage: he wipes and cleans the handle, then with a mixture of charcoal powder and candle wax covers the central section of the handle to blacken it. The manufacture of rhinoceros horn handles requires from half a day to three days of workmanship, while 20 to 30 Water Buffalo horn handles could be made by one skilled craftsman in a day. The *souk* craftsmen also polish blades and repair old *jambiyas*, and are normally busy in their cupboard-sized workshops every day except Friday morning, which is a time of worship and rest.

Jambiya blades, belts and sheaths - their significance and manufacture

Blades. Hand-made Yemeni steel *jambiya* blades are considered the best, with the strongest metal coming

from recycled military tanks. The high quality blades are made predominantly in Dhamar and sell for around US\$20 each. In 1975, the main *jambiya* family imported the first machine for making blades. In 1993, the machine was producing 500 blades a day (main *jambiya* family, pers. comm., 1993).



Crawford Allan/TRAFFIC

Jambiyas in a line.

Belts. As for the belts which hold the *jambiya*, prior to 1989, all those in North Yemen¹ were made by hand, sometimes by women. The velvet-covered leather was embroidered with gold and silver threads. The main *jambiya* family imported from Germany and Japan two computer-

operated belt-making machines in 1989. The belts produced by machine are fairly inexpensive and popular. In addition, some belts are imported from Syria for the Yemeni market. The best belts are still hand-made, taking up to two months to complete.

Sheaths. It is the sheath that distinguishes the two main styles of *jambiya* today. The common design is the *asib* worn by those claiming tribal origin. It is J-shaped with a noticeable crook, and is made from wood wrapped with leather or plastic thongs and is attached to the belt. Judges (*Qadis*) and those who claim descent from the prophet Mohammed (*Sayyids*) wear a different sheath called a *thusa* which does not have a crook and merely curves, and it is also distinguishable by its *thuma* or round knob at the tip.

Current population estimates and conservation status of rhinoceroses

There are five species of rhinoceroses (Rhinocerotidae) in the world, the remaining wild populations of which are estimated by Brooks (1996) to be:

Javan Rhinoceros	<i>Rhinoceros sondaicus</i>	< 75
Sumatran Rhinoceros	<i>Dicerorhinus sumatrensis</i>	< 400
Greater One-horned Rhinoceros	<i>Rhinoceros unicornis</i>	c.2100
Black Rhinoceros	<i>Diceros bicornis</i>	c.2408
White Rhinoceros	<i>Ceratotherium simum</i> :	
	<i>Ceratotherium simum simum</i>	7532
	<i>Ceratotherium simum cottoni</i>	30

The 1996 IUCN Red List of Threatened Animals classifies the Sumatran, Javan and Black Rhinoceros species as Critically Endangered and the Greater One-horned Rhinoceros as Endangered. While the White Rhinoceros is classed as Lower Risk, it is estimated that it would be placed in a higher category of threat

within no more than five years, were current levels of protection for the taxon to be eroded (IUCN, 1996). By 1977, the entire family Rhinocerotidae was included in Appendix I of CITES, effectively banning international commercial trade. In 1994, an amendment was adopted regarding the South African population of Southern White Rhinoceros, which was transferred to Appendix II to allow trade in hunting trophies and live animals.

The political history of Yemen

To best understand the trade history, it is important to be aware of the complicated political history of the country. Clearly the following political changes have affected the trade and the economy, and bearing these events in mind partly explains why aspects of the trade may have fluctuated.

1839	Aden captured by the British. British ruled over southern and eastern Yemen as part of the Indian Empire.
1918	Northern tribes gain independence from Turkey and the ruling Imam lay claim to all historic Yemen.
1934	Britain signs a treaty guaranteeing the sovereignty of the Imam in the north.
1937	Britain makes Aden a protectorate and Crown colony.
1959	Development of the British-sponsored Federation of South Arabia by southern Yemeni chieftains. The Federation included Aden from 1963.
1962	In the north, the army overthrows the ruling Imam and proclaims the Yemen Arab Republic (YAR — referred to as North Yemen in this text), but fighting between royalists and republicans continued until 1970.
1967	The British withdraw from the Federation of South Arabia, which was renamed the People's Republic of South Yemen.
1970	People's Republic of South Yemen renamed, the People's Democratic Republic of Yemen (PDRY).
1970s-80s	Tense relations between PDRY and YAR result in postponement of agreed unification plans.
1982	Ministerial Decree No. 193 of the Ministry of Economy and Industry was issued, banning the import of rhinoceros horn.
1987	Ministerial Decree No. 29 of the Ministry of Economy Supply and Trade was issued, prohibiting the re-export of rhinoceros horn.
1990	PDRY and YAR unite to form the Republic of Yemen. Yemen supports the Iraqi invasion of Kuwait.
1991	The Gulf War.

Yemen's political history since unification

In the early years since unification in May 1990, there has been a mixture of elements which has both facilitated the illegal trade in rhinoceros horn and discouraged consumption of rhinoceros horn. The unification of North and South Yemen imperverished the economy, making luxury items, including rhinoceros horn, less affordable. However, this also allowed the facilitation of smuggling owing to the country's expanded international border and additional ports of entry. It has been estimated that 30% of all consumer items enter Yemen illegally. Conservation efforts in Yemen have been far from effective owing to incidences of non-co-operation between northern and southern Yemeni politicians following unification. Disputes intensified between Yemen's President from the north and the Vice-President from the south. Civil servants suspended action, corruption allegedly escalated and insecurity caused additional

lawlessness (al-Saqqaf, 1994; Ma'asher and Balfakiah, 1994; Sulfian, 1994). In August 1990, support by the Yemen Government towards Iraq's invasion of Kuwait resulted in the loss of financial aid to Yemen from Kuwait and other countries, and restricted conditions for Yemeni labourers in Saudi Arabia by November 1990. The estimated financial losses Yemen incurred as a result of its stance taken during the Gulf War was over US\$1 billion a year from 1991 until at least the end of 1993 (Anon., 1993). The Yemeni rial was devalued by 54% against the US dollar between 1989 and 1991, which translated into a sharp rise in the price of rhinoceros horn in the Yemeni currency.

In 1994, the breakdown in political infrastructure, dissatisfaction among tribesmen in the eastern part of the country, riots over food prices, rising inflation, negative per capita growth, and the widening gap between the rich and poor caused by political and economic mismanagement, culminated in civil war. On 5 May, aircraft from southern Yemen bombed Sanaa and the northerners retaliated by bombing Aden. Fighting continued at great expense to the country, until the southerners surrendered on 7 July 1994. It took almost two years of strict financial reforms in Yemen, under the auspices of the World Bank and the International Monetary Fund (IMF), before the economy stabilised. The country continues to rely on its oil and increasingly its gas production and foreign aid. Exports other than oil are virtually non-existent except for small quantities of biscuits and fish. There is little tradition of competitive capitalism and there are very few industries and businesses producing commodities for export.

Trade in rhinoceros horn to Yemen: a historical overview

The origin of the horn in trade to Yemen

While Asia's rhinoceroses have been poached predominantly for the horn to be made into medicines in eastern Asia, Africa's rhinoceros horn has been in demand for both medicines and *jambiya* handles. The fact that there have been no reports of any horn from Asian rhinoceroses entering Yemen is understandable, as horn from the Greater One-horned, Sumatran and Javan species has always been much scarcer, smaller, and with horn approximately 10 times the value compared with the African species (as it is believed to be more efficacious). Since the 1970s, nearly all the rhinoceros horn destined for Sanaa originated from eastern Africa and Zambia. Snared, speared, shot with poisoned arrows and bullets, Africa's Black Rhinoceros numbers plummeted dramatically, from perhaps 65,000 in 1970 to about 14,785 by 1980, declining rapidly towards the couple of thousand remaining today (Milliken *et al.*, 1993). White Rhinoceroses, while better protected in South Africa, disappeared in the thousands from their northern range in central Africa. Poachers left rhinoceros carcasses mostly untouched, taking only horns.

Exported from Tanzania, Kenya, Burundi, Ethiopia, Somalia, Sudan and, more recently, Eritrea and Djibouti, horn would often be smuggled into Yemen and up to Sanaa, usually cut into pieces and hidden in food such as wheat, meat or honey. In the 1970s and 1980s, rhinoceros horn was also brought in to Taiz and, to a lesser extent, Dhamar (the country's two other towns with small *jambiya* industries). Sometimes *jambiya* craftsmen themselves travelled to Africa and brought rhinoceros horn back with them, normally by boat, and then up to Sanaa by vehicle.

The trade has been dominated for over 30 years by one traditional Yemeni family based in Sanaa. They organised and carried out imports through direct links to traders in East Africa prior to the 1982 Yemeni ban. They remain the driving force behind importations and purchase most of the horn that enters the country illegally. They also maintain a large (several tonnes in 1996) stockpile of horn chips and shavings. As well as handling the majority of domestic trade in horns, they also have workshops which manufacture

jambiyas, belts and sheaths. Throughout this text they are referred to as the main *jambiya* family. They also knowingly and unknowingly provided a good deal of the data upon which this report is based.

Trade before 1970

Traders in Yemen have been importing African rhinoceros horn for centuries. This corner of the Arabian peninsula acted historically as an entrepot, sending horn farther east. Only a little horn was used in Yemen, for *jambiya* handles of a small elite. The earliest document recording the trade from East Africa to Arabia is the Periplus of the Erythraean Sea produced during the first century A.D. Rhinoceros horn was said to be sent from Ethiopia to Muza, thought to be near Mocha port (re-named Al Mukha - see Map of Yemen). During the first half of the nineteenth century, the Port of Aden developed at the expense of Mocha. Trade statistics from the period of British control of Aden as part of the Indian Empire (1839-1937) do not mention rhinoceros horn and by 1907 the Government of India had prohibited the import of rhinoceros horns and hides into the port, except with an export pass-note issued by Customs at the point of export, as a way, even then, to protect rhinoceroses. Although East African official statistics from the 1940s to the 1970s show an increase in rhinoceros horn exports to Aden, probably the major port of entry in south-west Arabia at that time, there is no official record of its entry as its importation into Aden was illegal. However, the long-standing main *jambiya* family, which has also been the main dealer and importer of rhinoceros horn in Yemen, reports importing approximately 250 to 300kg during the 1950s, mostly via Aden, and about 400kg in 1960 and 1961.

During most of the 1960s royalist and republican forces were at war in North Yemen. The country remained economically impoverished and low incomes were likely to have curtailed the demand for rhinoceros horn. Up until 1970, North Yemen was probably one of the least developed, feudal countries in the world.

1970s

The conclusion of an eight-year civil war in 1970 and the opening of North Yemen to the outside world in the 1970s, along with the increase in oil prices in the Gulf, led to a marked improvement in the standard of living among North Yemenis. About a million men emigrated from North Yemen to Saudi Arabia and other Gulf countries, working as labourers, sending back approximately US\$1 billion a year to their home country. For the first time, a very large number of North Yemenis could afford to buy prestigious *jambiyas* with rhinoceros horn handles, and merchants responded by importing enormous quantities of horn to meet demand. *Jambiyas* had been forbidden in Aden during British rule (see Yemen's political history), and by the Marxist Government in South Yemen from 1967 to 1990. South Yemen did not therefore share in the "heyday" of rhinoceros horn consumption taking place in North Yemen in the 1970s.

From 1969-1977 North Yemen official statistics show that an average of 2878kg of rhinoceros horn² were imported each year and an annual average of 8750 rhinoceros horn *jambiya* handles were being produced (Table 1). At the peak of the trade, in the mid-1970s, this figure reached 12 000 handles a year. From a wholesale price of US\$30 per kg upon importation in 1970, rhinoceros horn soared to US\$500 per kg by the end of the 1970s (Figure 1). The main *jambiya* family involved in the trade in rhinoceros horn in Yemen has also provided its own import figures for the period, recording 3000kg of imported rhinoceros horn a year during the 1970s. This minimum amount of 3000kg imported annually into North Yemen in the 1970s represented almost 40% of all the rhinoceros horn on the world market, based upon calculations on global trade statistics. Far more horn was consumed in North Yemen than in any other nation in the world at that time.

Figure 1

Official imports of rhinoceros horn into Yemen, 1970-1979 (actual and estimated)

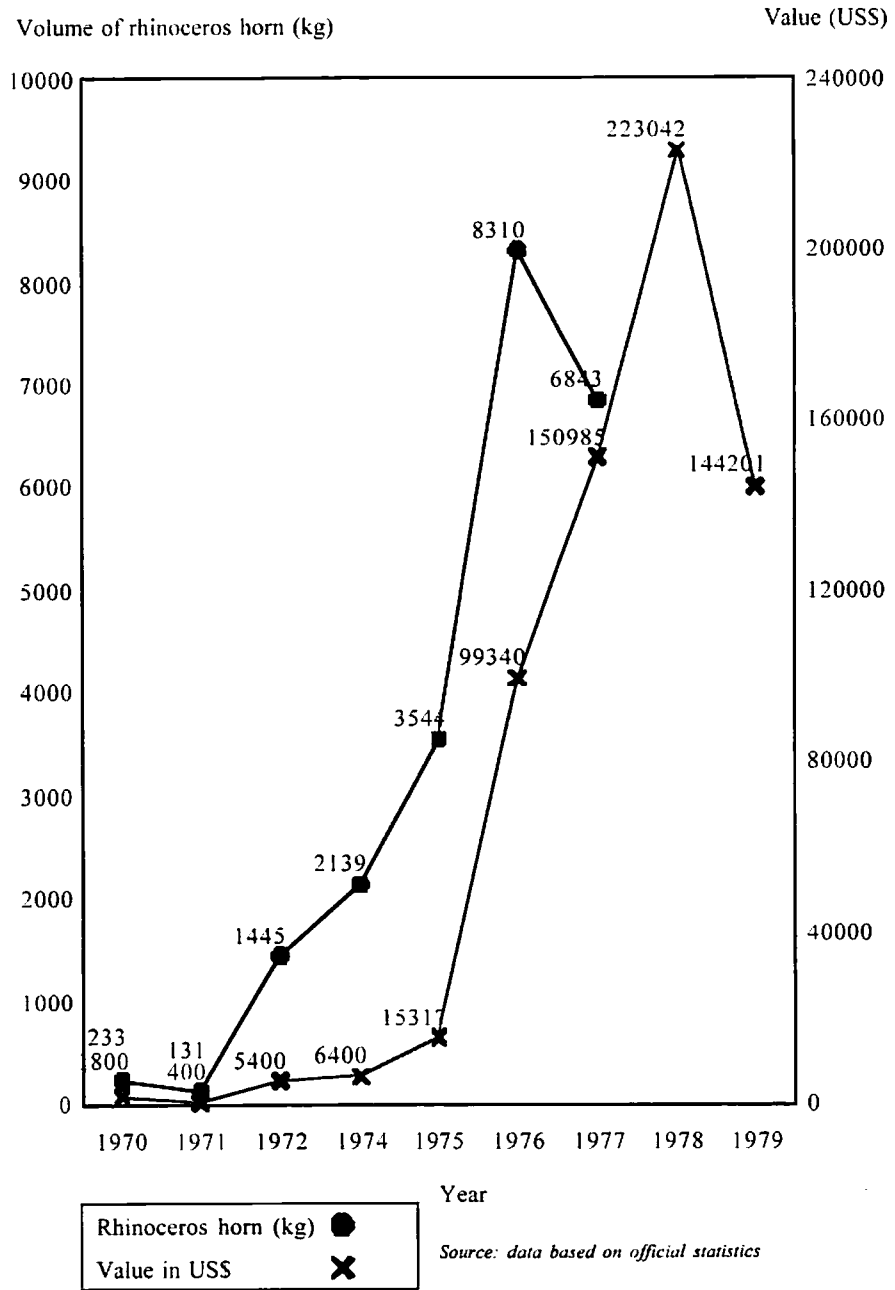


Table 1

Official rhinoceros horn imports into North Yemen from 1973 to 1975

Country of Origin	1973		1974		1975	
	kg	US\$	kg	US\$	kg	US\$
South Yemen	1160	4070	950	6127	375	3282
Djibouti	310	912	-	-	-	-
Ethiopia	180	236	300	3282	-	-
Kenya	-	-	186	1838	2000	17 505
India	-	-	181	1785	-	-
Kuwait	-	-	-	-	100	875
Total	1650	5218	1617	15 221	2475	21 662

Source: Anon., 1975.

Note: The data in 1975 for South Yemen and Kuwait are estimated based upon the import price of rhinoceros horn from Kenya for that year (40 rials per kg).

1980s

From 1979 to 1982, official figures for rhinoceros horn imports to North Yemen were combined with those for Water Buffalo horn. After 1982, no further records were kept, as rhinoceros horn imports were banned that year under Ministerial Decree.

Information collected from informers in North Yemen however, reveals a sharp decline in the volume of rhinoceros horn imports in the 1980s, mainly as a result of a decline in the supplies of rhinoceros horn available on the world market. The amount bought annually by the main *jambiya* family business fell to under 1500kg in the early 1980s and production of rhinoceros horn handles had dropped to an annual average of 3750, although North Yemen's share of world imports of rhinoceros horn increased at the same time, to 50%. This was despite a rise in the import price from US\$100 per kg in 1976, to US\$766 per kg, by 1980.

The study of Yemen's trade in rhinoceros horn since 1990 forms the main focus of this report.

Legislation and conservation measures for North Yemen / Yemen

Rhinoceros protection under Yemeni legislation until 1990

Before 1980 there was virtually no awareness in North Yemen about the conservation issue of the rhinoceros horn trade, and no measures were taken to reduce or prevent North Yemen's role. The campaigns initiated at this time by international conservation NGOs, aimed at exposing North Yemen's staggering consumption of rhinoceros horn, were instrumental in the 1982 ban by North Yemen of rhinoceros horn imports into the country. The Ministry of Economy and Industry issued Ministerial Decree No. 193-82 on 22 August 1982, it stated: "The importation of rhinoceros horn is strictly forbidden in any form...This Decree is to be published in the Gazette, and its validity commences on the date of signature".

The following year in 1983, it appeared to many in the country that the Government would not attempt to

enforce the import ban, possibly because the Government considered the decline in rhinoceros numbers to be an African dilemma. It was the opinion of Government and foreign Ambassadors that until African range states increased their efforts to save rhinoceroses, North Yemen should not be expected to tackle the issue, according to the British Ambassador to North Yemen.

Smuggling in general into North Yemen was a significant problem. The American Ambassador to North Yemen, stated that illicit commodities were entering the country that were more serious in the Government's view, such as alcohol, and even this could not be curtailed. In the long term, however, it was thought that demand for rhinoceros horn would decline as the country was undergoing rapid modernisation. This only happened noticeably in Taiz where the trend was a decline in the number of *jambiya* wearers.

It was therefore not until 1986 that the first set of strategies were produced by the Government to try to enforce the country's rhinoceros horn import ban. The Foreign Minister drew up an action plan in collaboration with WWF. Seven main action points were drafted:

- 1) Encourage greater use of Water Buffalo horn for *jambiya* handle-making by eliminating import duty.
- 2) Issue a decree prohibiting rhinoceros horn re-exports.
- 3) Make an appeal to the main *jambiya* family to use material other than rhinoceros horn.
- 4) Request the Grand Mufti to issue a fatwa (an Islamic edict), stating that the killing of rhinoceroses is against the will of Islam.
- 5) Deploy spokesmen into the *souk* al-Janabi to explain to the craftsmen the new prohibitions on rhinoceros horn.
- 6) Request the President of the United Arab Emirates to counter smuggling rhinoceros horn from his country into North Yemen.
- 7) Approach all owners of *jambiya*-making businesses to request that they agree to stop using rhinoceros horn or lose their trading licences.

The Foreign Minister and officials also decided not to give *jambiyas* with rhinoceros horn handles as gifts to ambassadors and other dignitaries, as had been the custom. However, these *jambiyas* continued to be given as gifts by Yemeni businessmen to visiting or departing colleagues.

The implementation of the action plan began in 1987 when the Prime Minister contacted the head of the main *jambiya* family and cautioned him against using new supplies of rhinoceros horn. Furthermore, on 20 January 1987 the Ministry of Economy, Supply and Trade issued Decree No. 29 prohibiting the re-export of rhinoceros horn, and notification was given to the Customs Department to enforce it. Import restrictions and duty on Water Buffalo horn were abolished in this year, to promote its use by the craftsmen. The Foreign Minister had discussions with officials of the United Arab Emirates, who agreed to clamp down on the illegal rhinoceros horn trade. The Ministry of Supply and Trade had communicated to craftsmen in the Sanaa *souk* the need to stop making rhinoceros horn handles.

In addition in 1987, an affidavit was issued which every craftsman had to sign, which was an agreement not to use rhinoceros horn. This was an initiative by the Foreign Minister, the delegation and the Director of the National Geographic film "Rhino Wars". All six of the seven points of the action plan which were related to the Government were dealt with in the late 1980s. The only point of the action plan that had not been completed was the issuance of the fatwa.

International protection of rhinoceroses

The role of CITES

Since CITES entered into force its member countries have devoted much attention to the rhinoceros, beginning in 1975 with the listing of all three Asian species and one African sub-species (the Northern White) in Appendix I and the listing of one African species (the Black) in Appendix II. In 1977, the Southern White rhinoceros sub-species and Black Rhinoceros were listed in Appendix I, but some of the African Parties to CITES still did not have national legislation to prohibit rhinoceros horn exports, and continued to sell their stocks abroad. An amendment was adopted at the Conference of the Parties to CITES in Fort Lauderdale in 1994 regarding the South African population of the Southern White rhinoceros, which was transferred to Appendix II to allow the trade in hunting trophies and live animals.

Stricter control of the exploitation of rhinoceroses was sought at the third meeting of the Conference of Parties to CITES in 1981. Resolution Conf. 3.11 was passed, which recommended that all non-Parties to the Convention prevent rhinoceros products from being commercially imported and exported across their international borders. In addition, the Resolution requested all Parties and non-Parties to place a moratorium on the sale of all government and parastatal stocks of rhinoceros products under their control. Despite this plea, CITES was largely unknown in North Yemen at this time. Six years after Resolution Conf. 3.11, the Foreign Minister of North Yemen, was not aware of the existence of the Convention (Dr al-Iryani, pers. comm., 1987). The CITES Secretariat had written to the Ministry of Agriculture in North Yemen, during that six-year period but without success.

In July 1987, at the sixth meeting of the Conference of Parties to CITES, the Parties expressed great concern over the continued trade in rhinoceros products. Their conclusions formed Resolution Conf. 6.10, which urged a prohibition by all Parties on international and domestic trade in rhinoceros products, improved awareness by law enforcement agencies, higher penalties for dealing in rhinoceros products and effective action against poachers and middlemen. The Resolution recommended that the Parties should apply pressure to those countries which still allowed trade in rhinoceros horn (especially Burundi and the United Arab Emirates) to take action to stop it. The use of substitutes for rhinoceros horn and development of national and international rhinoceros conservation strategies were encouraged (Barzdo *et al.*, 1987). In 1994, at the ninth meeting of the Conference of the Parties to CITES, Resolution Conf. 9.14 was adopted which provided a new approach to the issue and in particular repealed Resolution Conf. 6.10, which eliminated the requirement to destroy stocks of rhinoceros horn. In addition, the Standing Committee has discussed the issue at each of its subsequent meetings, adopting several significant decisions including sending a high-level delegation to Yemen.

Action from non-governmental organisations

Conservationists were not aware of the consumption of large quantities of rhinoceros horn in North Yemen for *jumbiya* handles until it was documented by a researcher who visited the country in 1978. But it was not until 1981 that NGO intervention occurred. WWF sent an investigator to determine a methodology which could be applied to reduce the rhinoceros horn trade in the country. The report concluded that: "Yemenis...find it difficult to focus their attention on the plight of wildlife...Pressure from international groups concerned with conservation...could help bring the issue to the forefront. However, enactment of laws to prohibit the importation of rhinoceros horn and enforcement of such laws are highly unlikely in North Yemen at the present time... Most people consulted felt that little can be done at the Yemeni end to help the rhinos in Africa." (Izzeddin, 1981).

In 1982, the African Wildlife Leadership Foundation (AWLF) in Washington D.C. provided postcards for

their supporters to send to the Government in North Yemen, protesting against the country's rhinoceros horn trade. AWLF, IUCN, WWF and the US Embassy in Sanaa pressurised North Yemen to ban rhinoceros horn imports. One month later, in response to the criticism, the Government prohibited the import of rhinoceros horn. However, no strategies were formulated to enforce the ban and curtail the trade. Neither the North Yemen Government, nor the international conservation community were able to invest money and manpower into affecting this, a condition that has continued to some extent into the present.

In 1987 WWF US employed a cultural anthropologist "to develop a strategy to decrease and discourage the use of rhino horn in North Yemen". One of the conclusions of that work was: "The only workable solution over the long term must involve a change in attitude, since the total cessation of illegal trade is not likely". The strategy included recommendations for collaboration with the Government, in particular to provide appropriate alternative materials for dagger hilts which were adequate for both the requirements of the craftsmen and the demand for luxury dagger hilts (Varisco, 1987).

The influence of the US Government

A Hearing in the US House of Representatives on rhinoceros conservation took place on 25 September 1986. With respect to North Yemen, the emphasis was placed upon the US\$33 million in aid which the US donated to the Government. The Department of State was requested to exert pressure on the country, using this financial influence, to enforce its ban on rhinoceros horn imports. Subsequently in December 1986, the US Ambassador held a meeting with the Foreign Minister, the British Ambassador and WWF.

International media

In late 1981, a television programme, "Passport to Extinction" was shown in the USA on CBS criticising North Yemen's role in the sharp decline in numbers of Africa's rhinoceroses. This heralded a major media campaign opposing the killing of rhinoceroses for daggers. The Reader's Digest published "Slaughter in Africa" and "Africa's Wildlife: Countdown to Zero". On 29 June 1982 the New York Times ran an article "Rhinoceroses Trapped in A Strange Web of Ritual and Economics" which was syndicated all over the English-speaking world. The President of AWLF in Washington D.C. showed this article to the North Yemen Ambassador to the USA. This was an indication that awareness of the rhinoceros horn trade problem was increasing amongst government officials.

In 1984 a film was made with footage of rhinoceros horn in Sanaa's old *souk* and it was televised in 1985 in the USA for PBS as "Rhino on the Run" and in Britain for BBC as "Horns of Dilemma". It was hoped that further international criticism on Yemen's rhinoceros horn trade would help influence governments and encourage international conservation organisations to initiate action. In 1987, the National Geographic film was made called "Rhino Wars" with substantial footage on North Yemen. It was released in 1988, and seen widely in Yemen. No documentaries on the rhinoceros horn issue were made in Yemen in the early 1990s due to insecurity in the country. However, press articles continued to appear.

METHODOLOGY

Mobilisation of international action, pressure and interest

WWF International initiated a project from 1985 to 1992, which had the remit of attempting to halt (North) Yemen's role in the trade in rhinoceros horn. WWF sent investigators to North Yemen in 1978, 1983, 1986, 1990 and every year from 1992 to 1995, sometimes also with support from other organisations (see acknowledgements). The purpose was to investigate and monitor the rhinoceros horn trade and to hold meetings with senior officials to discuss law enforcement and Yemen's accession to CITES. On most missions some progress was made by Yemen, as documented in this report. Every positive step taken by

Yemenis, such as the decrees, fatwa and the seminar, apparently came about due to initiatives from NGOs. There was always a cessation in activity once the NGO delegation had left the country. A lack of funding for extended follow-up after these missions was in part to blame. WWF did however produce numerous articles and materials for the international press on the subject to increase awareness. WWF also produced two films in Arabic for Yemeni television at the request of the Foreign Minister, to increase public awareness amongst the ordinary Yemenis. A United Nations Environment Programme (UNEP) Special Envoy for rhinoceros conservation visited Yemen in November 1992 to once again press the matter.

Trade surveys

Previous market surveys

The trade situation in Yemen has been examined by WWF and TRAFFIC most years since 1978, mainly in the capital city, Sanaa. In some years comprehensive survey work was not undertaken as other activities took precedent, and in those years the general trade trends were simply updated. The dates and locations of the full surveys performed are shown in Table 2. Most of the surveys were undertaken in the Sanaa *jambiya souk* — *souk al Janabi*, other trade centres were visited occasionally and were not surveyed as comprehensively. The cities in the south were generally not surveyed until 1993 as they are far less important because southern Yemeni craftsmen had to abandon their work in from 1967 to 1990, many becoming knife repairers instead.

Table 2

Locations and dates of previous survey work

Survey	Month	Year	Cities surveyed
1.	October	1978	Sanaa
2.	October	1983	Sanaa, Taiz
3.	December	1986	Sanaa
4.	October / November	1990	Sanaa, Dhamar
5.	April	1992	Sanaa
6.	January / February	1993	Sanaa, Mukulla, Seiyun, Shibam, Tarim
7.	October / November	1993	Sanaa
8.	April / May	1994	Sanaa
9.	January / February	1995	Sanaa, Taiz, Dhamar

Most of the surveys lasted approximately one week except for survey 6 which was twice as long to incorporate a thorough review in the south. The research and investigation undertaken followed the methodology outlined below, with variation from these methods dependant upon circumstances and timing. One exception to this prior to 1985, was in acquiring information on the trade routes for rhinoceros horn into Yemen, which was determined through discussion with traders in East Africa as well as Yemen.

The 1995 and 1996 market surveys

Surveys of the *jambiya* workshops and craftsmen were carried out primarily in Sanaa; these were performed for comparative purposes to determine changes in availability of rhinoceros horn and the extent of the manufacture and retail volume over time. The *jambiya* workshops in *souk al Janabi* also sell finished *jambiyas*, both for wholesale and retail. Adjoining this area is a large retail section where there are always many daggers being offered for sale. There are two other main areas in Sanaa selling *jambiyas*:

opposite the old Bab al Yaman gate and at the Alhussaba market on the airport road. These four retail areas were surveyed. In Taiz, surveys were undertaken in 1996 showing 11 workshops around the gates at Bab al Kaber and three at Bab Musa within the old town walled-*souk*.

The basic techniques applied in the field for the survey work included visual counting, photography, taking video footage, test purchases, and interviews with the buyers and sellers of *jambiyas* and with those knowledgeable about trading in rhinoceros horn. Translators helped when necessary in the various *souks*. Part of the methodology employed must remain confidential and is not included in this report. In the latest survey, the workshops were surveyed twice for rhinoceros horn in Sanaa *souk*, on 28 November and 2 December, 1996. All survey work was undertaken using several techniques and stages:

- 1) observations in *souks* by investigators posing as tourists;
- 2) discussions with *jambiya* traders and craftsmen by investigators posing as tourists;
- 3) covert filming of craftsmen and traders by investigators posing as tourists;
- 4) attempts to purchase new rhinoceros horn *jambiyas* by investigators posing as tourists;
- 5) formal interviews with craftsmen and traders by the TRAFFIC delegation;
- 6) formal counting of workshops, craftsmen, retail outlets, rhinoceros horn *jambiyas* and prices of *jambiyas* by the TRAFFIC delegation; and
- 7) dealings with traders and craftsmen by local investigators posing as rhinoceros horn traders.

The identification of rhinoceros horn *jambiyas* is not simple and requires a good deal of experience and comparison of samples of different materials to become expert in this skill. Rhinoceros horn could be distinguished by the patterning of the hairlines and the patina, this was only readily recognisable to someone very familiar with *jambiyas*. The other materials utilised for handles were also recognisable by a combination of their colour, texture, grain and feel but not all were necessarily uniquely recognisable by one of these elements alone. A close inspection by an expert could always confirm the exact material: all persons involved in the identification of these materials for the purposes of this report had developed such skill through many years of fieldwork in Yemen and training.

Estimates of rhinoceros horn *jambiyas* crafted were calculated in part based upon intelligence information received as to the volume of rhinoceros horn imported each year. The calculations were made according to the premise described by craftsmen, that three handles could be made from a single rhinoceros horn weighing 1.5kg and two handles could be made from a 1kg horn. For example, investigators determined that 46.5kg were definitely imported in 1996 but other information indicated that at least an additional 30kg may have been imported in the same year. It is feasible that much more may have been imported but sound evidence of this could not be determined. If 75kg were smuggled into Sanaa in 1996 then the capacity for production of new handles from that volume for the year could be approximated to be 150 new handles on the market dependant upon horn quality.

The number of workshops and craftsmen were counted to evaluate trends in prosperity, demand and *jambiya* production. Approximate calculations of production and consumption levels were made based upon the average time spent making a rhinoceros horn handle, the number of craftsmen working rhinoceros horn, the number of hours worked per day and the number of days worked per year. The craftsmen provided the information on the time it takes to produce a handle and the number of hours worked a day. Only a rough estimate could be made on the amount of horn consumed per year, and of the maximum capacity that could on average be produced if there was a ready supply of rhinoceros horn. This methodology was used for nearly 10 years, and the results were roughly the same for the maximum

amount of horn imported in any one year.

Surveys of the retail shops selling *jambiyas* in the Sanaa *souk* were also completed in detail in order to update prices of *jambiyas* with various handles. This information was critical to ascertain details of supply and demand. The other cities visited in order to survey the dagger workshops and retail shops and investigate the illegal trade in rhinoceros horn included Taiz, Dhamar, Ibb and Yarim. The retail shops in Hodeidah on the coast and in Bajil in the Tihama area were examined also, and general impressions were ascertained from the wearers of the *jambiyas* in the coastal region, the northern highlands region and in the central region.

Political meetings

Dialogue has been maintained through the various delegations since 1978, by holding discussions with Government officials and foreign ambassadors in Sanaa. On the 1996 mission, meetings were held with three ambassadors in Sanaa in order to obtain advice and support on encouraging Yemen to join CITES and enforcement of the import, re-export and domestic trade bans. The ambassadors were able to arrange most of the appointments with the senior Government officials for the TRAFFIC delegation. Meetings were held with ministers including the Prime Minister, deputy ministers and with officials of the Environment Protection Council (EPC). The reason for the meetings as explained to the officials, was that international conservation NGOs wished to help conserve the rhinoceros but IUCN and WWF through TRAFFIC, also wished to help Yemen. The information imparted to officials by the delegation was aimed at forewarning the Yemen Government, in order to prevent international criticism of Yemen that was brewing over the rhinoceros horn trade issue. The delegation outlined the possibilities for Yemen to receive technical expertise and training, if the country joined CITES and worked towards enforcing its bans on the rhinoceros horn trade.

Economic and cultural findings

Throughout the delegations and visits since 1978, a number of resident academics were interviewed in order to gain a greater understanding of the history of *jambiyas* in respect to the use of rhinoceros horn, and the changes taking place concerning the wearing of *jambiyas*. Academics interviewed included historians, anthropologists, economists and religious leaders. Both economics and culture were important in order to explain the role of *jambiyas*. The data on the standard of living in the country helped to determine how much money people had to buy daggers. In Yemeni culture the *jambiya* has remained one of the most important things for a man to own; fashion and the craftsmen partly dictate production. Thus a two-pronged approach of economic and cultural reviews was used in collecting data on the status of the *jambiya* and the use of rhinoceros horn.

RESULTS: SURVEYS

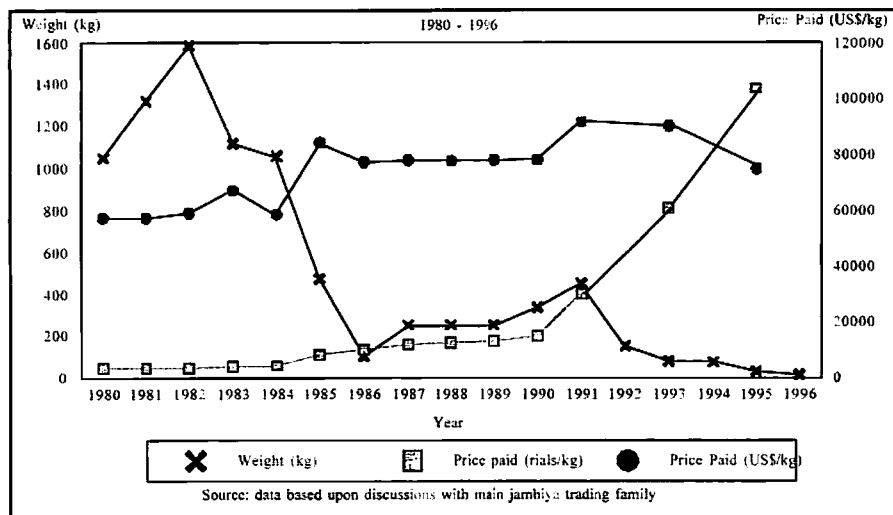
Overview of past survey work

Rhinoceros horn imports from 1985 to 1995

By the late 1980s, North Yemen's average import volumes of rhinoceros horn had fallen to under 500kg per year according to the main *jambiya* family. This was due to the dual effects of declining numbers of rhinoceroses in Africa with the expansion of East Asian interests in the horn trade, with East Asians able to offer double the price per kg for rhinoceros horn to traders in African horn by 1988. This was due to stronger Asian currencies and rhinoceros horn fetched higher prices in East Asia. From 1985 to 1990 the US dollar price of rhinoceros horn in Sanaa remained roughly stable at around US\$1000 per kg (although it rose sharply in Yemeni rials from 8300 to 15 000 per kg between 1985 and 1990). In 1991 the amount of horn imported increased slightly compared to 1990, with an annual estimated total of 450kg (according

to rhinoceros horn traders in Yemen). This was mainly due to one large shipment of 200kg. In 1992, 150kg were known to be imported but only 30kg of this was of good enough quality and this was bought by the main *jambiya* family (the family claimed that the rest was sold mostly to Chinese in Sanaa). In 1993, it is known that 85kg were imported, of which the main *jambiya* family bought 80kg. In 1994 at least 70kg of horn were smuggled into Yemen, and it appeared that smuggling continued at roughly this level for 1995 too. The significant decrease in import volumes during the 1990s was due to a drastic decline in the economy of the country. A graph illustrating the fluctuation in import volumes since 1970 is depicted in Figure 2.

Figure 2
Imports of rhinoceros horn by the main *jambiya* trading family (80% of total imports)



The smuggling of rhinoceros horn into Yemen (and domestic trade)

Before 1982, traders brought most horn to Aden and then transported it by road across the border into North Yemen. A small quantity of horn came into Hodeidah port in North Yemen, and by air to Sanaa airport. Since 1982, rhinoceros horn has reached Yemen by a number of routes. The main routes have been: first, by sea on traditional dhows and freighters or small motorboats to ports along the Yemen coast, especially Mocha and Khukhah; second by large modern ships to Hodeidah; third by air to Sanaa, mostly from Addis Ababa and Khartoum in recent years; fourth by air from eastern African city airports to cities in Arabia, such as Jeddah, and then overland across the unpatrolled desert border; and fifth by boats to neighbouring countries (mostly to Saudi Arabia, but also to the United Arab Emirates and to Oman) and then overland to Sanaa (see Map of main smuggling routes for rhinoceros horn into Yemen, page 20).

In 1985 and 1986 most of the horn was coming through Sudan, supplied by Sudanese and Sudanese of North Yemeni origin. They sent some of it to Jeddah where it was re-packed into sacks of rice, wheat-flour and sugar which were shipped to Hodeidah. At this time Oman was also importing rhinoceros horn for daggers called *khanjar* worn by prominent Omanis. In addition, according to the main *jambiya* family, ethnic Yemenis just across the border in Saudi Arabia were importing from North Yemen rhinoceros horn handles and fitting them onto blades; in 1988 there were 15 workshops in Najran and five in Khamis Mushayt, repairing, selling and assembling *jambiyas*, according to a survey at that time (Martin, 1990). In Sanaa in 1990, two or three craftsmen would be working on a rhinoceros horn handled *jambiya* at any one time, each craftsmen taking two or three days to produce the finished dagger. For this number of daggers

at that rate, on average one dagger would be completed per day. Based upon one day of rest per week, that equated to approximately 313 daggers per year.

In 1991 intelligence information indicated that the 200kg shipment of rhinoceros horn mentioned earlier was dispatched by Koreans from Dar es Salaam by air to Sharjah in the United Arab Emirates and taken overland into Yemen. In 1992 150kg of rhinoceros horn came by dhow from East Africa to Oman; a resident Yemeni then took the horns by vehicle from Muscat to Sanaa. In 1993 some horn was shipped from China to Dubai by ship with Bangladeshi crew; from Dubai it came to Sanaa by four-wheel-drive vehicle over the desert. In addition, some horns came by truck from Riyadh via Sada in the far north of Yemen to Sanaa. In 1994, most of the horn known to have been imported came via Djibouti by boat. A little came overland from Oman. In Dhamar in 1993 one of the seven shops surveyed was selling a new *jambiya* with a rhinoceros horn handle. The last rhinoceros horn *jambiya* seen for sale there was priced at US\$800 in 1993. This was the last known sale in Dhamar since that time. In the early 1990s at least two makers of *jambiyas* in Dhamar sold their rhinoceros horn shavings to Sanaa traders for US\$200 to US\$400 per kg. All of this information was acquired through investigations and sources cannot be divulged here.

Rhinoceros horn re-exports from the 1970s until 1995

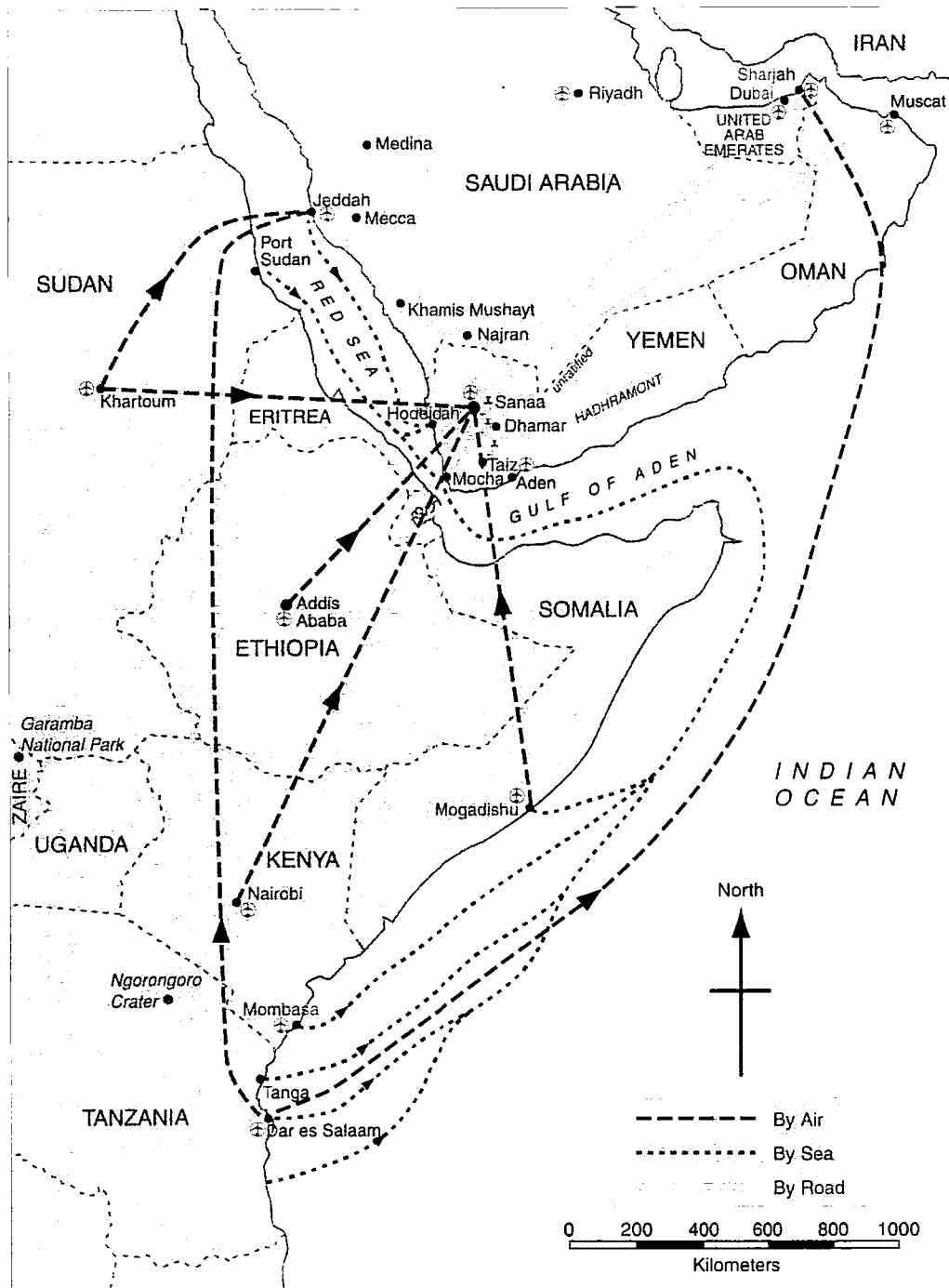
Over 60% of a rhinoceros horn used primarily for manufacture of *jambiya* handles was left-over as pieces, chips and fine shavings. This residual material was carefully collected by the craftsmen and sold to Chinese, Taiwanese, Japanese and South Korean traders, involved in the re-export and more recently, smuggling of the material to their home countries. Rhinoceros horn was used in traditional East Asian medicine as it is highly prized for its curative properties. In the mid-1970s, Chinese workers were employed in North Yemen to build roads for an aid project; upon their return to China they brought horn pieces and powder with them to sell to traditional pharmaceutical companies. The *jambiya* craftsmen realised the demand and began saving the residual waste. The value of this commodity in Sanaa in 1978 was about US\$200 per kg. Following the import ban in 1982, the price of shavings increased significantly and in 1987 following the re-export ban the price continued to increase at a greater rate. Between 1983 and 1990 the price rose from US\$219 per kg to US\$340 per kg. In 1993 the stocks of shavings were registered (totalling 772.5kg, 500kg registered with the main *jambiya* family), and by 1993 the price per kg had reached circa US\$500, with a more gradual increase since then. There had only been one officially stated incident of any rhinoceros horn pieces or shavings for export being confiscated. At Sanaa airport Customs officials confiscated and burnt immediately a quantity of rhinoceros horn shavings intended for export, according to Ministry officials and local academics. Registered stocks must not be exported although they could probably be sold internally to other traders.

Recent survey work (important results since unification)

Surveys of jambiya workshops and trade centres

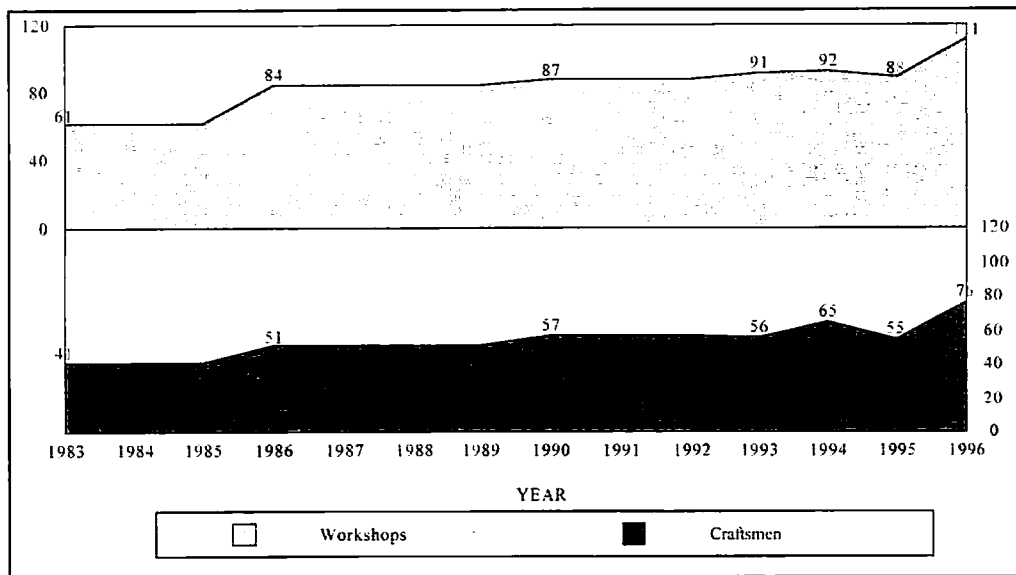
The largest number of *jambiya* workshops and craftsmen in Yemen were within the old town of Sanaa in *souk al Janabi*. Workshops and the number of active craftsmen had increased since 1983 (Figure 3). On 2 December 1996 there were 76 open workshops and 111 craftsmen at work during a late afternoon survey by TRAFFIC, when the *souk* tends to be most active. The Sanaa craftsmen make *jambiya* handles and assemble them onto blades as well as repairing old *jambiyas* and polishing blades. Another TRAFFIC survey on 28 November 1996 determined that four craftsmen in separate workshops were filing new rhinoceros horn handles and collecting the shavings. On 2 December however, no craftsmen were filing new rhinoceros horn pieces, although there were some shavings seen, collected in a pile. Almost all craftsmen were carving Water Buffalo horn. In the past, whole horns from India's domestic Water Buffalo

Main routes for smuggling rhinoceros horn into Yemen



were imported and cut by a skilled craftsman at home with a large saw, first down the centre and then across into 10cm blocks. Today, to economise on weight and space most Water Buffalo horns are cut into oblong pieces before being exported to Yemen from India (especially from Hyderabad). Rhinoceros horn also used to be imported whole, and nowadays to avoid detection, the horn is usually cut into oblong pieces in Africa prior to being sent to Yemen, leaving some of the residual shavings and chips.

Figure 3
 Number of active *jambiya* workshops and craftsmen working with a range of materials in Old Sanaa souk. 1983-1996

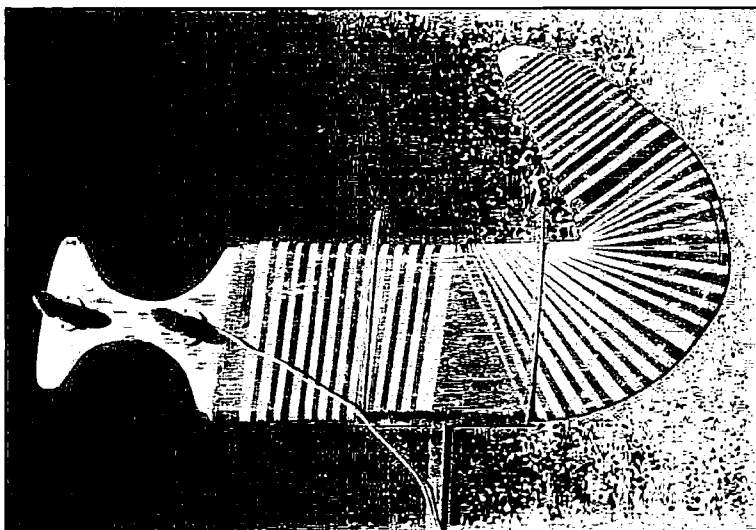


The next most important centre for the making of *jambiyas* was Taiz, its *jambiya* industry was much smaller than Sanaa, having just 14 workshops. There were about 28 *jambiya* craftsmen working at any one time in Taiz. No rhinoceros horn was seen being used during the inspections in November and December 1996. The owners and craftsmen in these shops claimed that they had not had access to raw rhinoceros horn for at least three years. Their explanation was that the major market was in Sanaa where the main *jambiya* family operates. Local academics claimed that demand was also greater in Sanaa as almost every adult man had a *jambiya* and most wore them daily in the north, unlike in Taiz (which had more influence from the south), where under 50% of the men wore a *jambiya* on a daily basis, this was evident from observation also. Most new *jambiyas* made in Taiz had Water Buffalo horn handles. Wood was more commonly used in Taiz than in Sanaa, mainly from a local tree, *Cordia abyssinica*. *Jambiyas* with camel nail handles were also more commonly made in Taiz than in Sanaa. There were about 12 old silver jewellery shops in the old souk of Taiz selling old Yemeni silver-sheathed *jambiyas* to tourists. A number of opportunist individuals also had one or two *jambiyas* to sell, and offered these to passers-by in the old souk.

The third manufacturing centre visited was Dhamar, a town about half-way between Sanaa and Taiz. Although handles and full *jambiyas* were produced there, the town is best known for making the blades. No rhinoceros horn was believed to have been consumed in Dhamar since 1993. At that time one of the seven shops surveyed was selling a newly made *jambiya* with rhinoceros horn handle for US\$800. In December 1996, craftsmen in Dhamar were making handles out of Water Buffalo horn, wood and camel

nail. All the craftsmen interviewed said that rhinoceros horn was now very difficult to obtain due to its scarcity, although they admitted it was easy to smuggle it into and through the country by various means. They claimed that nearly all the rhinoceros horn in Yemen, was sold in Sanaa to the wealthy *jambiya* traders.

Apart from Sanaa, Taiz and Dhamar, *jambiyas* were rarely manufactured anywhere else in Yemen due to



Crawford Allan/TRAFFIC

Jambiya retail sign in Sanaa, Yemen.

lack of expertise beyond these main centres. Most towns have shops selling *jambiyas* usually in the *souks*, including in the coastal Tihama region. There was a shop in Aden which opened in 1996 selling northern-made new *jambiyas*, and older *jambiyas* are sold in the jewellery shops of the Hadhramout in southern Yemen. At the time of the most recent survey, the investigators visited Yarim, Ibb, Hodeidah and Bajil in northern and western Yemen, all of which had shops selling *jambiyas*, mostly with Water Buffalo horn handles; some were offering older daggers with rhinoceros horn handles.

Retail prices for jambiyas in 1996

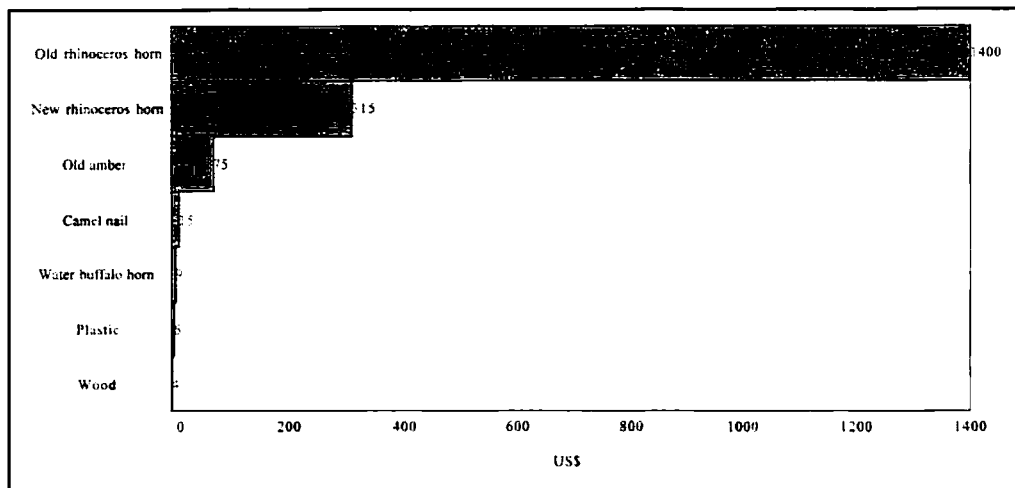
Retail prices were documented from the three main centres of Sanaa, Taiz and Dhamar. The *jambiya* workshops in Sanaa's *souk* al Janabi also sold finished *jambiyas*, both for wholesale and retail. Adjoining this area was the large retail section where there were always over 200 daggers being offered for sale. There were two other main areas in Sanaa selling *jambiyas*: opposite the old Bab al Yaman gate, which is the gateway to Sanaa's old town where the *jambiya souk* is located, and at the Alhussaba market.

In late 1996, over 90% of the new *jambiyas* offered for retail sale in Sanaa had Water Buffalo horn handles and ranged in price from US\$6 to US\$12; the average price was US\$9.20. These prices were for the *jambiyas* only and did not include the price of the sheath and belt (usually sold separately when new), which cost new less than US\$5 for one of poor quality. *Jambiyas* with shiny plastic handles range in price from US\$4 to US\$8 averaging at US\$6 each. A test sample was purchased from an individual at Bab al Yaman, for YR900 (US\$7.20). *Jambiyas* with camel nail handles are sometimes available in Sanaa and vary in price from US\$12 to US\$16, averaging at US\$14. Those with wooden handles are the least frequently made and are the cheapest at US\$4 each. Local investigators documented nine adult-size, newly made *jambiyas* with new rhinoceros horn handles, the price varied from US\$192 for one with a small handle to US\$440 for one with an average-sized handle. The average price was US\$286.

During a detailed negotiation regarding a new rhinoceros horn *jambiya*, one trader in the main retail area close to the *jambiya* workshops offered a very small *jambiya* for US\$160, a large one was offered at a reduced price of US\$224 due to a split handle and another quite small one was offered at US\$192 (10cm x 4cm). The latter *jambiya* was purchased for later formal identification to determine authenticity. A graphical representation showing price variations for different materials is provided in Figure 4.

Figure 4

Average retail prices (US\$) for *jambiyas* in Sanaa in 1996, depending on handle materials.



Besides new *jambiyas*, second-hand and old ones are also available in Sanaa. Daggers with rhinoceros horn handles made about 10 or 20 years ago varied from US\$320 (with a cracked handle) to US\$4000, averaging at US\$1477. An old camel nail one was priced at US\$20. Unusual *jambiyas* with old amber handles were on average priced at US\$75. There were some with camel bone handles, bleached bright white, made in southern Yemen prior to 1967 which were offered for US\$80 to US\$300 each.

Jambiyas were sold wholesale and retail in Taiz. The retail price for one with a wooden handle was about US\$4 for an adult's or US\$2 for a child's; plastic US\$9; camel nail US\$20; and Water Buffalo horn US\$9. The Yemeni silver-sheathed *jambiyas* were being sold in the tourist shops where they offered an array of older *jambiyas*, some with amber, camel nail and Water Buffalo horn handles for an average of US\$100 to US\$150 including the silver sheath, and wooden ones for US\$16. The retail aspect of the trade in Dhamar was minimal, although prices would not fluctuate greatly from those in Taiz.

The prices quoted above were aimed at Yemenis in general, while the prices for tourists were sometimes about double these amounts. For example, when posing as a tourist in Sanaa, a medium quality new Water Buffalo horn *jambiya* was purchased as a sample, priced at US\$30; the same type of dagger when surveyed was priced at US\$12. Water Buffalo horn *jambiyas* sold in the town of Bajil were offered for US\$13 to tourists however. The price of a new sheath and belt in the tourist shops at Sanaa Airport was US\$25 for good quality, in Taiz a new sheath alone fetched US\$6 at tourist prices. The tourist market was significant, although it was unlikely that tourists would purchase the old expensive rhinoceros horn *jambiyas*. However, when posing as a tourist wishing to purchase a rhinoceros horn *jambiya*, the response in Sanaa was one of indifference or irritation by the traders, who generally did not wish to sell these type of *jambiyas* to tourists. In Taiz 'zarafa' *jambiyas* offered to an investigator acting as a tourist were in fact good quality camel nail, priced around US\$50 each and not the rhinoceros horn the traders claimed.

Investigations into the recent rhinoceros horn trade to Yemen (1995 and 1996)

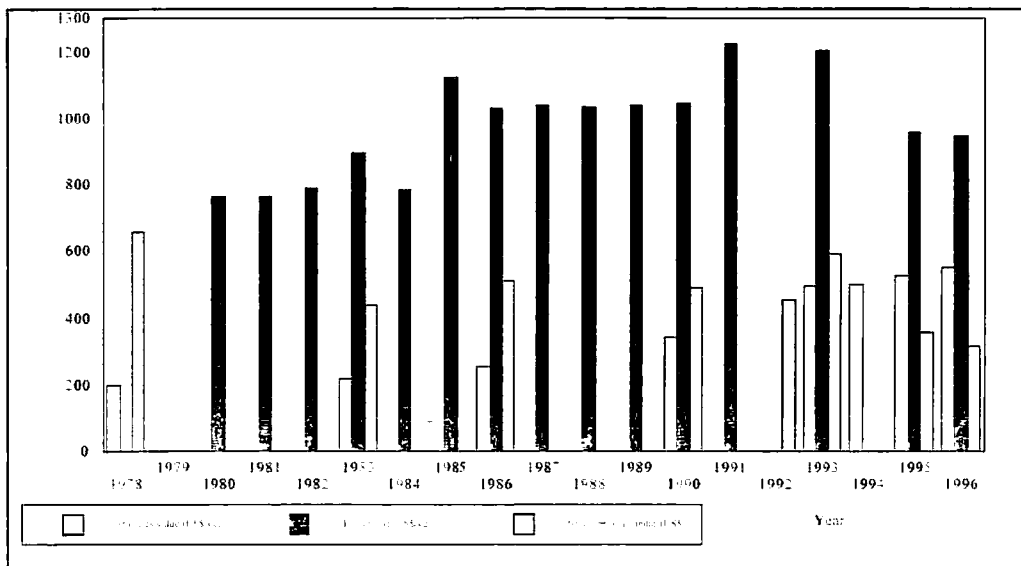
Although rhinoceros horn has been prohibited from entering Yemen since 1982, quantities are believed to have come into the country every year since then and indications are that this is unlikely to abate in the

near future according to investigations undertaken by locals. From extensive and in-depth interviews between these local investigators and traders, smugglers, owners of *jambiya* workshops and craftsmen, the latest TRAFFIC survey was able to obtain detailed information on this illicit trade for 1995 and 1996, updating previous data, and showing recent trends.

Of the 10 different import transactions which the survey uncovered for 1995, it is alleged that nine consignments were bought by different traders in Sanaa and one consignment of 1.5kg was sold in Dhamar, but destined for Sanaa. Small traders stated that they sometimes sell their horns on to the main *jambiya* family, making a small profit. The minimum quantity imported at any one time was 1.5kg and, excluding that of the main *jambiya* family, the maximum was 7kg. The main *jambiya* family admitted in an interview to buying from importers "over 30kg" (although the number of consignments is not known) out of a total of 57kg alleged to have been brought into Yemen in 1995. The amount paid by all the traders varied from a minimum of US\$696 per kg to a maximum of US\$1200. The average price in 1995 per kg was US\$957 paid either in Yemeni rials at the free market rate or in US dollars cash, this was based upon the average price offered from a large number of offers made to local investigators posing as sellers of rhinoceros horn.

From January to November 1996, the local investigators detected that 46.5kg of rhinoceros horn were definitely imported. Of this, 44kg were bought by traders in Sanaa in 10 consignments, and one quantity of 2.5kg was sold in Dhamar in September 1996 (but was sold later in Sanaa to the main *jambiya* family). The minimum quantity imported was 1.5kg and the maximum 5kg, excluding possible larger imports bought by the main *jambiya* family in Sanaa. This family claimed to have bought 15kg from importers in an unknown number of consignments. The *jambiya* traders in Yemen paid US\$550 to US\$1350 per kg of rhinoceros horn, with an average price of US\$945 in 1996 based upon intelligence information acquired in 1996 (Figure 5).

Figure 5
Values for rhinoceros horn, shavings and new *jambiyas*, 1978-1996 (US\$)



By 1996 only one craftsman would be working on a rhinoceros horn *jambiya* per day, still taking two to three days to complete it. Therefore the present rate of production and perhaps consumption was

estimated using the previously explained technique, at approximately 125 *jambiyas* a year. This roughly fits with the amount of rhinoceros horn estimated to be imported each year.

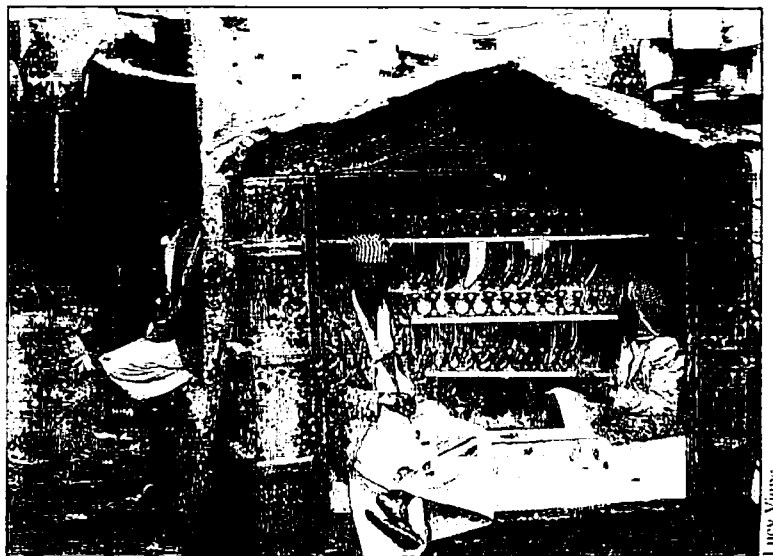
Trade routes determined in 1995 and 1996

Since the early 1970s to the early 1990s, almost all rhinoceros horns were sent to Yemen's capital Sanaa direct from Africa, especially from Tanzania, Burundi, Kenya, Sudan, Ethiopia and Somalia (see Map of main smuggling routes of rhinoceros horn into Yemen). Occasionally countries without rhinoceroses were used as entrepots such as Djibouti, Saudi Arabia, Oman, the United Arab Emirates and even China. In 1995 and 1996 most of the horn was shipped out of Djibouti, Sudan, Somalia and Saudi Arabia. Immediately prior to this period rhinoceros horn was coming in from the United Arab Emirates and Oman by land transport. No trader mentioned these two routes for 1995 and 1996.

Investigations revealed several active trade routes for rhinoceros horn from Africa to Yemen in 1995 and 1996. One of the most frequently used was from Djibouti: by ship or dhow to Mocha or Khukhah and then by road via Taiz to Sanaa. At least one consignment (of 2kg) in 1995 was sent by ship from Port Sudan by a Sudanese seaman to Hodeidah, by road to Sanaa, where the Sudanese sold four pieces at US\$875 per kg. It was claimed that Khartoum was also the origin of some horn which was exported illegally by air or ship, allegedly by diplomats (Yemenis, Somalis or Sudanese). Often the horns were cut up into smaller pieces, and mixed together with other goods purchased in Khartoum for transport to Yemen. Pilgrims coming from Somalia, Ethiopia, Sudan, and other African countries allegedly brought rhinoceros horn on the annual pilgrimage to Mecca and Medina, selling to traders in Jeddah. From this port the horn was moved overland to Sanaa. Cattle boats travelling from ports in North East Africa also allegedly transported horns to Yemen, especially to the Mocha area. Other places of export mentioned by the merchants were Kenya, Ethiopia and Eritrea, by boat to the Yemeni or Saudi Arabian coast, or by air to Sanaa airport. Contradictory information was received concerning the route by air to Sanaa. Some traders believed that this route was declining in importance, due to the risk involved, as in 1990 some rhinoceros horns had been confiscated on arrival at Sanaa airport from Africa. The trader involved was arrested and jailed. This is the only officially reported occasion of imports being confiscated. Other traders claimed this was a good route as it was faster, if the assistance of airport officials could be obtained. Some rhinoceros horn was believed to have been smuggled in using this method recently.

Smuggling methods

The smugglers use ingenious methods to hide rhinoceros horn in order to prevent its detection by the authorities. A widely claimed method was to cut the horns into small oblong pieces and put them into jars or tins of honey, the pieces of horn supposedly looked like honey comb. Other methods to hide the horn included burying oblong pieces within cartons of matches or inserting them into raw meat before sending them by ship to the Yemeni coast. All the traders contacted were confident that it was still easy to move small quantities of rhinoceros horns into the country without them being discovered. The easiest routes



Market stall with a selection of *jambiyas* for sale.

Lucy Vigne

mentioned were by sea to the Mocha area or with the help of Muslim pilgrims going to Saudi Arabia. The trade is allegedly assisted by corrupt officials who will allow the trade if personal payments are made. For example, it is generally recognised that Customs officers were bribed in the 1980s to allow rhinoceros horn shipments to enter the country; some evidence suggests that this remains the case today.

Supplying the main jambiya family

For decades, one family has been acquiring the majority of the rhinoceros horn that is brought into Yemen (Table 3). This family has the resources to outbid other traders and to import the largest quantities. By its own admission the main *jambiya* family formerly purchased most of the horn themselves in Mombasa in the 1970s. After the 1982 import ban in North Yemen, they did not take the risk of importing the horn personally. Their contacts and friends have arranged for the transport of the horns since this time. Until 1992, the internal trade in rhinoceros horn was perfectly legal and so they were not breaking the law by purchasing and moving horns through the country. Since this time the family has been even more careful and most deals are allegedly carried out secretly in Sanaa. The family is very well known at all levels. Most small-scale smugglers of rhinoceros horn learn the family name and location and travel to Sanaa to trade with them. Alternatively, Yemenis may set up a deal and escort smugglers to the family and thereby receive a commission. If offered rhinoceros horn, traders who have the money may buy some horn pieces themselves and sell them to members of the main *jambiya* family for a small profit.

Table 3

Minimum estimates of imported rhinoceros horn bought by the main *jambiya* family from 1980 to 1996 with countries of origin.

Year	Volume bought (kg)	Country of origin
1980	1050	Tanzania, Kenya, Ethiopia, Somalia
1981	1320	Tanzania, Ethiopia, Sudan
1982	1585	Tanzania, Ethiopia, Sudan
1983	1120	Kenya, Sudan
1984	1058	Tanzania, Somalia
1985	475	Ethiopia, Sudan
1986	100	Sudan
1987	c.250	Tanzania, Kenya, Sudan
1988	c.250	Tanzania, Kenya, Sudan
1989	c.250	Tanzania, Kenya, Sudan
1990	c.333	Tanzania, Kenya, Sudan
1991	c.450	Tanzania, Kenya, Sudan
1992	150	East Africa - imported from Oman
1993	80	Unknown - imported from Dubai
1994	20	Unknown - imported from Oman
(to April)		
1995	30	Unknown
1996	15	Eastern Africa

Note: Between 1980 and 1993 this represents approximately 80% of total imports of rhinoceros horn into Yemen.

Internal movement of horn to trade centres

The nationality of individuals involved in the actual smuggling and moving of rhinoceros horn through

Yemen to Sanaa and Dhamar in 1995 and 1996 was claimed to be Sudanese, Eritreans, Ethiopians, Djiboutians (including at least one woman trader), Somalians and Yemenis. The information received indicates that once entry into Yemen is achieved horns are transported by road only. They were not carried on internal commercial flights because of the greater risk of being detected, nor by private aeroplane which cannot be hired in Yemen as they are virtually non-existent. They cannot be transported by train, as there are no trains in Yemen. A taxi driver encountered by the TRAFFIC investigators stated that some of his friends had rhinoceros horn pieces confiscated several months ago while trying to transport them from the Yemen sea port of Hodeidah to Sanaa. The taxi driver had been given one small block of horn before the confiscation which he had kept locked in the boot of his car, to sell later. The driver let the investigators examine the horn block. None of the relevant officials in Sanaa knew about this confiscation, suggesting either a lack of information exchange between authorities, a lack of willingness to admit to the problem or perhaps even the enforcement personnel involved had kept and sold the rhinoceros horn pieces themselves.

RESULTS: ATTEMPTS TO MOTIVATE GOVERNMENT ACTION SINCE 1990 UNIFICATION

Motivating action and the Yemen Government's recent attempts to tackle the trade

Following international pressure, Yemeni officials did try to improve their domestic legislation in the early 1990s. This was initiated by the Ministry of Foreign Affairs, when he learned of the 200kg shipment of rhinoceros horn that entered Yemen in 1991. On 19 May 1992 the Ministry of Supply and Trade issued Decree No. 124. It read:

- I) It is strictly prohibited in the territory of the Republic of Yemen to deal in rhinoceros horn before it has been processed into *jambiya* handles; and whoever is in possession of this material in its raw form shall report to the Ministry of Supply and Trade (its branches in Aden or offices in other governorates), the quantity in his possession or with others, within a maximum period of 60 days from the date of this decree.
- II) Those in possession of rhinoceros horn in its natural form shall make it available for the Ministry of Supply and Trade representatives to number the declared quantity immediately after declaration.
- III) For any quantity of rhinoceros horn found unnumbered after 90 days from the date of this decree, representatives of the Ministry of Supply and Trade, assigned for control and inspection purposes, have the right to confiscate the material and take legal action.
- IV) This decree shall be enforced from the date of issue and notified to those who are concerned with its implementation".

The Government did not take any steps to implement this decree and few people were even aware of its existence. The decree was therefore re-issued on 2 December 1992. The decree was better publicised but was not implemented for another year.

In November 1992 the Cabinet convened to discuss CITES. two years after the Government had received the necessary papers from the CITES Secretariat. The Cabinet agreed that Yemen should join CITES. Cabinet Decree No. 240 resulted which included the following statement: "The Cabinet approved the joining of the Republic of Yemen to the international Convention which deals with the sale of animals threatened with extinction...The Foreign Minister shall notify the concerned authorities about our country joining the Convention...This Decree shall be carried out as of 2/12/1992". However, the necessary follow-up activities did not take place.

In 1993, the US Government considered applying the Pelly Amendment³ to Yemen for its lack of control on the import and use of rhinoceros horn. Under this threat, Decree No. 124 calling for registration and inspections of old rhinoceros horn stocks was issued. All of the main rhinoceros horn traders were instructed to register all stocks of rhinoceros horn. By late November 1993, 40 *jambiya* traders had documented and certified their alleged rhinoceros horn stocks. All of the stocks were in the form of chips and shavings. The main *jambiya* family declared 500kg, the second most significant *jambiya* family claimed 100kg, and the total registered was 722.5kg; only 12 traders admitted to having stocks while 28 traders declared none. Due to the general political and economic turmoil in the country, no proper inspections of stocks were made to uniquely mark or verify the quantities. Nevertheless, as a result of these efforts economic sanctions were not applied to Yemen by the US Government.

In early May 1994, a WWF mission met with the Ministry of Supply and Trade to push for effective implementation of Decree No. 124. The Ministry undertook steps to comply by tightening up enforcement but civil war began on 5 May and the process was halted as the mission was forced to leave the country. Following the war there was confusion in Government, with frequent position changes among officials and the revisions were forgotten. Many of the relevant officials claimed that in 1995 and 1996 that there was minimal trade in rhinoceros horn in Yemen. The EPC for example, felt that there was little new rhinoceros horn in the Sanaa *souk* and that illegal imports were negligible. All other information received from non-official sources as part of this investigation indicated that this was not the case. During the 1996 mission, the Minister of Supply and Trade agreed that Decree No. 124 of 1992 should be enforced by making inspections obligatory and by applying penalties for breaches of the regulations. The Ministry admitted that only two partial inspections of the Sanaa *souk jambiya* workshops had been performed by their officials, the last in 1993, they did not find rhinoceros horn. The EPC indicated that since July 1995 they had inspected the *jambiya souk* informally approximately eight times but had not seen new rhinoceros horn handles being made or sold. The EPC had also contacted the main *jambiya* family (who had been co-operative) and the EPC were assured that they had not manufactured any new rhinoceros horn handles over the past few years.

Concerning imports, the Minister of Supply and Trade claimed that they were trying to detect smuggling but the borders with Oman and Saudi Arabia were now essentially open and that smuggling in general was very common in Yemen. The Vice Minister requested technical support and training for his inspection team, and assistance was required to convene seminars to explain the rhinoceros horn issue to Yemenis and to encourage media publicity. It was also suggested that a committee of pertinent officials and experts be formed to take the issue forward, hopefully negating the problem of officials changing posts. The Ministry recognised the need for supporting the families who formerly dealt in rhinoceros horn and requested compensation for old stocks. The mission made it clear that compensation could not be justified as almost all the old stocks were from horn imported illegally since 1982. The opportunities for development of a re-training programme for those families who would be most affected was emphasised as an alternative option by the delegation, even though any reduction in rhinoceros horn carvers was more due to the decline of the rhinoceroses than because of the Yemeni trade bans. The delegation further explained that they did not want to hinder the domestic trade in old (pre-1982) *jambiyas*, with rhinoceros horn handles and hoped that these would always be available for those wanting good quality daggers.

A major theme of discussion promoted by the TRAFFIC delegation with senior Yemeni officials was the long delay by Yemen in joining CITES. The first decree approving the joining of CITES was in 1992 but by November 1996 Yemen had still not acceded to the Convention. In contrast Yemen had quite quickly managed to join several other environmental conventions which came with associated funding and

Decrees promulgated by the Yemen Government since unification

- | | |
|------|---|
| 1992 | Ministerial decree No. 124 of the Ministry of Supply and Trade, banning internal trade in raw rhinoceros horn and making it compulsory to register rhinoceros horn stocks and ordering inspections of rhinoceros horn stocks. |
| 1992 | Cabinet decree No. 240, approving (by the Cabinet) the joining of CITES and instructing the Foreign Minister to notify the appropriate Yemeni authorities. |
| 1997 | Public decree No. 4 - 1997, dated 5 January 1997. the President of the Republic of Yemen signs the final document to enable Yemen to join CITES. |

resources. A series of stages had to be passed in which a number of documents had to be signed by various senior officials including the President in some cases. In May 1995 just before the CITES high-level delegation to Yemen, the Prime Minister signed a Ministry of Legal Affairs decree confirming that the Government had agreed to join CITES. The Ministry stated in 1996 that another decree required the signatures of the Prime Minister and the President before the final approval document confirming that Yemen would join CITES would be produced. If this stage was passed according to national law, Yemen could legally join CITES, by depositing a formal document of accession to make it internationally recognised. The Minister of Legal Affairs confirmed on 1 December 1996 that all necessary paperwork would be completed by the end of December 1996. In 1996 various Ministries were approached to hasten the processes required to push through the paperwork and to simply determine exactly what was required to do so. The senior officials in the Ministries were co-operative and generally offered to ensure that the procedures required went ahead and encourage the President to hasten the process of accession. Yemeni officials blamed the delays on the lack of follow-up by the Government, NGOs and the CITES Secretariat. Some wished international NGOs had put more regular pressure on the Yemen Government to join CITES.

The Ministries were keen to determine whether support might be forthcoming after the Government joined the Convention. Accordingly, on 28 November 1996 the delegation wrote to the Ministry of Supply and Trade with details of support that was likely to be forthcoming. TRAFFIC delivered a letter documenting the technical assistance, training, communications and financial support that could follow from the international community. On the same day the Executive Director of TRAFFIC International also wrote to the Minister on this issue, with copies to the Secretary General of the CITES Secretariat and the Director Generals of WWF and of IUCN.

The Foreign Minister had been following the rhinoceros horn issue with much concern since the 1980s. In 1996 he assured the delegation that Yemen would join CITES within a month. During an interview on 2 December 1996, the Prime Minister also told the TRAFFIC delegation that the Government would sign the documents within a month. The Prime Minister's Office publicised the meeting to show Government support for CITES. The discussions with the delegation were filmed and broadcast on the television news the same day, both the Arabic and English broadcasts. The meeting was also covered in the national newspapers, in particular the leading Yemeni daily newspaper, Al Thawra (3 December 1996).

The ambassadors of several countries of influence have been encouraging Yemen to join CITES for about 10 years. The American and British Ambassadors had been involved in particular and they once again assured the delegation that they would exert influence on the Yemen Government and organise meetings.

The Dutch Ambassador agreed to assist in the push for the joining of CITES and would consider funding projects concerning public awareness on the rhinoceros horn issue, should Yemen accede to the Convention. The Netherlands has considerable influence as it was a major donor to the Yemen Government (US\$36 million in 1996), and to the EPC specifically.

The role of CITES and UNEP

The CITES Secretariat has been attempting to convince Yemen to join CITES for many years. In 1990 it delivered the necessary documents for joining CITES to the Government. No progress had been made by February 1994 and it was realised that far greater pressure was required. Therefore the application of the US Pelly Amendment process was urged (Ashok Kumar, TRAFFIC India, pers. comm., 1994). A WWF delegation was sent to Yemen in April 1994, again to push for the completion of the CITES accession procedures. Officials requested that the process could not be finalised without the provision of an Arabic translation of the CITES Treaty. The CITES Secretariat had the text translated and it was given to the EPC to circulate. It appeared that all conditions had been met for a successful conclusion and a meeting was planned with the Foreign Minister, the US Ambassador and a WWF delegation. The Foreign Minister was to prepare and sign the document for joining CITES at this meeting. At the very time the document was to be signed, civil war erupted in Yemen and the process was set back dramatically.

In March 1994, the Chairman of the Standing Committee of CITES wrote to the Yemeni authorities requesting the Yemen Government receive a high-level delegation to explore means of stopping the rhinoceros horn trade. The visit was planned for June 1994, but the outbreak of civil war in May 1994 precluded this, and the delegation's visit was delayed until July 1995. The high-level delegation consisted of the CITES Secretary General and Mr Esmond Bradley Martin, a WWF representative and UNEP envoy. The Foreign Minister stated that he hoped that Yemen would have joined CITES before the delegation had left the country. However, the Ministry of Legal Affairs required that Arabic names of all species in the CITES appendices be provided to Yemen. Following the departure of the delegation no further action or communication occurred. The issue again lay dormant for over a year, while the CITES Secretariat determined if it were possible to document the Arabic species' names. The names were eventually provided by the Tunisian Management Authority, however, it was not until the TRAFFIC delegation's visit in late 1996 that the issue of CITES was once more brought to the Yemenis.

UNEP convened a conference in June-July 1993 in Kenya for rhinoceros range states, horn consuming countries and donors. The Environment Protection Council of Yemen developed a law enforcement capacity-building proposal for the conference, assisted by WWF. The Government required US\$115 000 in order to:

- 1) train Ministry of Supply and Trade officials and Customs officers to improve their ability to identify rhinoceros horn;
- 2) establish a bonus system to award efficient inspectors;
- 3) search for more materials to use for making *jambiya* handles;
- 4) campaign for the use of alternatives to rhinoceros horn;
- 5) strengthen the EPC's managerial abilities; and
- 6) join IUCN and other international organisations conserving rhinoceroses.

UNEP offered funding to the EPC for two officials to attend the Nairobi conference in order to present their capacity-building proposal and meet possible donors. Unfortunately, the EPC did not send a representative, and thus the funding for the capacity-building proposal failed because it was not presented.

The Pelly Amendment

In November 1992, WWF US and the National Wildlife Federation petitioned the US Government to apply the Pelly Amendment against China, Taiwan, South Korea and Yemen because of their continuing role in the rhinoceros horn and Tiger bone trades. The Foreign Minister in Yemen learnt of the Pelly Amendment and ensured the rapid issuance of Decree No. 124 controlling domestic trade. During 1993 the US Government closely monitored the situation in Yemen to ascertain whether Yemen should be certified under Pelly. In September 1993, Taiwan and China were certified under the Pelly Amendment, eleven months later Taiwan alone had economic sanctions applied. The Foreign Minister convinced a WWF delegation in October 1993 that Yemen would join CITES and pressure should be maintained to ensure this. Yemen did not join CITES but neither was the pressure maintained sufficiently. Nonetheless, in late 1993, the continuing threat of the Pelly Amendment did effect partial implementation of Decree No. 124 which banned trade in raw rhinoceros horn within Yemen and required registration of the craftsmen's old rhinoceros horn stocks. The registration took place and this decree satisfied the USA in the interim and the sanctions under the Pelly Amendment were avoided by Yemen. American (and other) Ambassadors continued to talk to officials about stopping the rhinoceros horn trade and joining CITES (American Ambassadors to Yemen, pers. comm., 1993-1996).

Encouragement of internal non-governmental efforts to combat the illegal trade

Rhinoceros species were barely known in North Yemen in the 1970s and 1980s, let alone the rhinoceros crisis. Apart from Government officials, it was not until the early 1990s that other Yemenis started trying to help. On 3 November 1990 the American Ambassador and WWF delegates met the Grand Mufti to request the issuance of a fatwa, as suggested in the 1986 action plan. On 20 May 1992 the Grand Mufti finally issued the fatwa. It stated: "...Islam prohibits the killing of animals, except for those slaughtered for their meat (e.g. goats, cows, camels), or predatory animals for protection of mankind. However, killing them to benefit from their horns, skin or other purposes, is prohibited and not allowed. Therefore killing the rhinoceros for its horn must be prevented, and we must protect their existence and allow them their freedom until their natural death".

The EPC organised a seminar on 26 January 1993 to review the rhinoceros horn trade and issues pertinent to Yemen's wildlife. Participants included academics, officials, traders, craftsmen, foreign dignitaries, WWF delegates and media representatives. A TVE film, "Rhino Horn" (funded mostly by UNEP) was shown at the seminar. The main *jambiya* family announced that it was unaware of the rhinoceros problem but stressed that half of the rhinoceros horn craftsmen had lost their livelihood due to the import ban and compensation was thus required. The seminar was reported on in the main television news in Arabic and English, and was covered in the Arabic and English newspapers, Al-Thawra and the Yemen Times. The seminar brought all of the major interests together for the first time to discuss the problem of the rhinoceros horn trade in Yemen; it was also highly effectual in raising public awareness. The Foreign Minister emphasised the critical importance of television as a tool to inform and influence the culture of the Yemeni people and encouraged WWF to produce documentary on the rhinoceros horn trade. The documentary was shown in Yemen in 1995. The Professor of Biological Sciences at Sanaa University agreed to incorporate material on rhinoceros conservation into the national school science curricula for education of schoolchildren.

A *jambiya* manufacturer initiated production of a high-value alternative to rhinoceros horn handles in 1994. The alternative was semi-precious stone, such as jasper and especially agate-handled *jambiyas*. Red agate is rich brown in colour and slightly translucent, a suitably attractive and expensive substance. The manufacturer presented an agate-handled *jambiya* as a gift to the President of Yemen. The President

ordered 30 such *jambiyas* as gifts for important dignitaries including King Hussein of Jordan and the President of France. The manufacturer undertook this initiative to stimulate demand in alternative substances, however, it has not been accepted among the *jambiya* makers, as stone is a substance which they find too difficult to work.

RESULTS: RESEARCH ACTIVITIES

Discussions with academics on economic and cultural aspects affecting *jambiya* demand

The per capita income had probably fallen by 50% since 1990 but the number of new *jambiyas* being made and worn had probably increased to an unprecedented level in 1996. This was mainly due to an extremely rapidly rising population which grew by 3.7% annually. This was compounded by other developments too. Historically, people with certain occupations such as barbers, iron-smiths, clothes-washers, butchers, tanners and cleaners of dead bodies in the northern region were not supposed to wear a *jambiya* due to a social class distinctions. Following the revolution these social rules slowly dissolved and these groups began to wear *jambiyas*. In southern Yemen *jambiyas* were banned from 1967 to 1990; since this time some were being worn again. In Yemen many of the better educated younger men would not so frequently wear traditional dress with a *jambiya*, preferring western-style dress. However, most possessed a *jambiya* to wear for special occasions, particularly weddings. Some Yemenis admitted they owned valuable *jambiyas* but sometimes would not wear them through fear of attack and robbery.

Some Yemenis were becoming aware that the rhinoceros horn trade was banned in Yemen for a sound reason. Television was the main conduit for this message, increasing awareness of the issues. For example, during the visit of the 1996 delegation a Cable News Network (CNN) documentary was shown on satellite television reporting on South Africa's rhinoceroses and the trade in their horn.

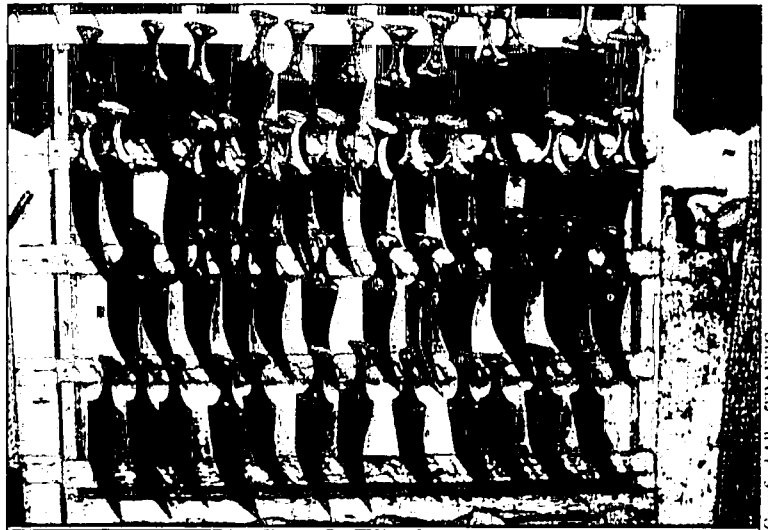
Discussions with *jambiya* wearers, traders and craftsmen

The changes in social attitudes and political laws which previously discriminated against the wearing of *jambiyas*, combined with the high population growth, brought about an increase from 1990 in the number of *jambiya* wearers. This was reflected in the increase in the number of dagger workshops and craftsmen recorded in the 1996 surveys in Sanaa and Taiz. The main *jambiya* family denied there had been a steady increase in *jambiya* production since 1990. The family members claimed that the number of *jambiyas* being made in Sanaa had declined from 3000 a day in 1990, to 500 in 1996. The data recorded in this report through various investigative techniques did not support their claims but indicated that production of *jambiyas* in general was flourishing. It is critical to emphasise however, that an increased production of daggers did not mean that more new rhinoceros horn handles were being produced. Most Yemenis could not afford *jambiyas* with rhinoceros horn handles (old or new), as in the 1970s and early 1980s. The majority of production and purchase in 1996 was of *jambiyas* made from handles of Water Buffalo horn followed by plastic, camel nail or wood. Furthermore, wealthier individuals would not spend US\$250 for a *jambiya* with a new rhinoceros horn handle because it was accepted that these were less attractive and not as prestigious. A small and slowly increasing number of educated Yemenis also thought it was unacceptable to have a *jambiya* with a new rhinoceros horn handle as the rhinoceros was so scarce and the new horn was banned. For these reasons wealthier Yemenis would pay from US\$300 to US\$1000 for a slightly older *jambiya* (the 1996 survey indicated that the majority of rhinoceros horn *jambiyas* available for sale were of that category).

A few very wealthy Yemenis have shown interest in acquiring *jambiyas* with handles made from semi-precious stones such as agate and jasper. In 1996, they were highly priced at about US\$1700 each because production was slow due to a lack of modern equipment, only 50-70 are produced a year. The

manufacturer requested funding for this business project in order to modernise the equipment, increase production, reduce price and increase sales. With well-targeted publicity, semi-precious stone could become more popular among the elite. However, during interviews with the main *jambiya* family they always stated that *jambiya* craftsmen in the *souk* would never be persuaded to carve semi-precious stone handles as they are "no good" and that most Yemenis people would not accept semi-precious stone or gold.

The main *jambiya* family controls 12 of the *souk* al Janabi *jambiya* workshops, and it is very influential. The family expressed annoyance that rhinoceros horn re-exports were banned. Requests were made for financial compensation for the stocks of rhinoceros horn powder and chips in their possession, and for loss of business because of the bans. The family denied that they had used new rhinoceros horn since the ban in 1982 but admitted that the 722.5kg total of powder and chips registered with the Government in 1993 was inaccurate. The family claimed to have a 1996 stock of 3850kg of powder and chips with an additional 30% owned by other families. They requested that the international conservation community pay US\$7000 per kg for these stocks; which was more than 10 times their market value. It is noteworthy for comparison, that in 1995 an undercover TRAFFIC investigation was shown 20.743kg of rhinoceros horn (selling price US\$2500 per kg), and had been offered a large stockpile of some 500kg of rhinoceros horn shavings, cut pieces and powder (selling price US\$450 per kg) by two brothers trading in Sanaa. They indicated they would be able to facilitate re-export of the consignment via car to Oman (Anon., 1995).



Jambiyas on a display stand, Sanaa *souk*, Yemen.

The main *jambiya* family stated that they represented the *jambiya* producers, and requested on their behalf that interest free or low interest rate loans be arranged for them to allow diversification away from *jambiya* production. The profit margins involved in the rhinoceros horn trade were no longer as attractive and hence some wanted to leave the business. The delegation stressed that claims for compensation and loans were unrealistic. The international conservation community were very unlikely to provide financial support as it would be impossible to justify substantial payments to those who had profited so greatly from the illegal trade in rhinoceros horn for decades. A re-training scheme was proffered as a possible long-term solution.

DISCUSSION

Yemen's role in the international trade in rhinoceros horn

Through intensive studies of the illegal market it has been possible to depict trade trends in rhinoceros horn smuggling as well as provide sound estimates of the volumes smuggled annually. As with any illegal trade it is not possible to put exact figures on these volumes but sound estimates can be made. One family has apparently handled the majority of all trade in rhinoceros horn, and therefore much concerning the trade has been gleaned from this family alone. The data on import volumes in recent years can be adjusted

to provide estimates of the minimum amount of rhinoceros horn imported per year, by adding another 10 to 20kg on average each year. Another method employed to analyse approximately how much rhinoceros horn is coming onto the Yemen market, is to count how many craftsmen are using rhinoceros horn at any one time in the Sanaa *souk*.

Rhinoceros horn has no longer been entering overland from Oman and the United Arab Emirates in 1995 and 1996, according to the traders. This may have been because less rhinoceros horn was being exported from East Africa to the United Arab Emirates and Oman compared with previous years, as supply was reduced and there was an increased risk to move it into these countries. Since 1984 rhinoceros horn was reportedly also being used in Oman for dagger handles but Omani officials claimed they had taken a tougher stance and introduced legislation banning the import of rhinoceros horn in 1994.

Q. How much gross profit can be made from a rhinoceros in Yemen?

A. Surprisingly little - US\$360.

- For the years 1994 to 1996 annual imports of rhinoceros horn to Yemen have averaged at least 75kg per year. This would have a domestic value at import of about US\$75 000 per year.
- That volume could produce approximately 150 *jambiya* handles per year. These *jambiyas* would have a total average retail market value of US\$60 000 per year.
- Approximately 40% of a rhinoceros horn is crafted into *jambiya* handles, the remaining 60% is residue: pieces, shavings and powder. Of that 75kg per year, 45kg is residue. The average wholesale price per kg for residue is US\$525 per kg in Yemen, for the East Asian traditional medicine market. The value for this annual residue would therefore be approximately US\$24 000.
- The total gross profit made from the original outlay of circa US\$75 000 would be a mere US\$9 000, based upon average figures.
- This volume of horn equates to what could be 25 rhinoceroses annually.
- That means that the gross profit made on each individual rhinoceros is on average US\$360 which is approximately YR45 000 or £230 or 20 months income for the average Yemeni (based on the official average annual per capita income in Yemen).
- The gross profit that can be made from a rhinoceros is far less than was expected. The high volume trade in buffalo horn *jambiyas* would produce comparatively more profit.

Yemen's domestic rhinoceros horn trade

In recent years the *jambiya*-making industry had been expanding with more *jambiyas* being made (from all materials) for the fast growing population. There was a 38% increase in the number of *jambiya* workshops which were open for business at the time of survey in the Sanaa *souk* between 1995 and 1996, with at least a 26% increase in the number of active craftsmen over the same period. The average number of open workshops over the period 1990-1996 was 94, the 1996 total was 18% above this mean total. The average number of active craftsmen over this same period was 62, the 1996 total was 23% above this mean total. Disregarding the fluctuation brought about by the civil war, the trend since the early 1980s has been

one of rapid growth in the manufacturing industry in Sanaa in line with the population growth. *Jambiya* workshops were also found outside the capital, specifically in Taiz (14) and Dhamar (11) but the relevance of these centres to the trade in new rhinoceros horn has been negligible in recent years. The *jambiya* industry has been dominated by the one large Sanaa family which had acquired the vast majority (over three quarters) of the rhinoceros horn entering Yemen since 1970. Their influence and involvement has made them both a major contributory factor to the rhinoceros crisis as well a key to possible solutions to the illicit rhinoceros horn trade in Yemen.

It is important to note that the prices paid for rhinoceros horn by traders in Yemen since 1985 has not increased in dollars, and if inflation was taken into account the prices had actually decreased, despite a sharp decline in supply. This was an encouraging indicator. There were several reasons for this decline. First, the price in Yemeni rials had risen sharply due to the massive devaluation in the local currency. Also, since 1990 the per capita income had fallen by 50% and most Yemenis no longer had enough surplus income to buy new rhinoceros horn-handled *jambiyas*. Second, all evidence suggested that those people who did have larger incomes preferred to buy the old second-hand, more esteemed *jambiyas* whose rhinoceros horn handles were considered more sayfani with a better patina. Although an average *jambiya* with a Water Buffalo horn handle cost about 1150 Yemeni rials (US\$9), one with a small, new rhinoceros horn handle was about US\$200, and for an older, small rhinoceros horn handle was at least double this but usually considerably more. The majority of *jambiyas* sold were made from Water Buffalo horn and materials other than rhinoceros horn which on average were priced at US\$8.5 in 1996. The most expensive known *jambiya* with a rhinoceros horn handle was reportedly sold in 1993 for a million dollars to a prominent Sheik. Attempts were made to ascertain the demand for rhinoceros horn in Yemen. In 1993 the main *jambiya* family theorised that if all restrictions were lifted and if the horn were sold to the family for US\$1000 per kg (the approximate import price prevailing at the time in Sanaa), then 650kg would be the entire demand for Yemen per year. If the horn were offered to the family for US\$2000 per kg at that time, the family would buy almost none. The investigators estimated at the time that roughly 300 *jambiyas* were made annually with rhinoceros horn handles. The demand for rhinoceros horn was clearly price sensitive and since 1993, the decline of the economy had reduced the demand for rhinoceros horn with a reduction in the purchasing power of individuals. Therefore, by 1996 the demand would probably be less than 650kg.

Yemen Government action on the rhinoceros horn trade

While it is the responsibility of Yemen to control its illegal trade, government action could have been much more effective if international pressure and follow-up had been more regularly maintained. The claims of some ministers that they required reminders from that community to take action on the issue was no real excuse: a WWF delegation had been visiting Yemen nearly every year since 1983, with one main gap (in the late 1980s). Clearly, external support is essential for a country which has no resources to spare. Officials regularly asked for wildlife media materials, at their request two short documentary films were made by WWF for Yemen television translated into Arabic. The CITES Secretariat visit was not enough to persuade Yemen to join the Convention; there was little follow up from Yemen, even after the CITES high-level delegation visit to Sanaa in July 1995.

Although ministers were always willing to meet international conservation NGOs in Sanaa and were active and helpful at these times, preferring to deal with individuals face to face rather than through faxes and letters, the Yemen Government did not have the resources or impetus to implement its decrees. Unfortunately, the Government of Yemen did not have the political will to co-operate due to matters more pressing than wildlife conservation. Many officials were simply not aware of the issue or not surprisingly, they tended to focus on matters of economic importance. For example, the EPC did not attend the UNEP

rhinoceros conference in Nairobi in 1993, which could have benefitted Yemen. Yemen has remained the poorest country in peninsular Arabia, and the level of skilled and motivated manpower in the civil service was low as working in business commanded much higher salaries. Yemen has gone through many crises since the late 1980s (unification, the Gulf War and the civil war, especially). The Government had therefore not put a high priority on wildlife conservation. To compound the problem, there had allegedly been widespread corruption in many Government departments. Smuggling of goods in and out of Yemen was so rife that it was extremely difficult to enforce the rhinoceros horn trade ban.

In 1996 officials stated that they wanted to speed up the process of joining CITES. The Government had chosen the EPC as the Management Authority for CITES. The EPC claimed that their informal inspections of the *souk* since 1995 had not found new rhinoceros horn handles being worked there. Investigators had witnessed the presence of new horn in the form of roughly cut pieces, on each visit to Sanaa in recent years, including 1996. In the future efforts must be made by the international community to provide assistance and motivation to the EPC staff. The EPC would also need to liaise more effectively with the Ministry of Supply and Trade. In particular, help with inspections and understanding the trade routes was clearly needed. It would be beneficial for expertise to be provided for training in inspections (with initial supervision of inspections of the *souk*), and to assist with detection methods of the current trade routes, and anti-smuggling techniques.

Although using new rhinoceros horn was illegal, no attempts had been made to detect, apprehend or prosecute craftsmen working on new rhinoceros horn handles. The craftsmen continued to manufacture using new horn openly in the *souk*. By the end of 1996 there was still no deterrent for those people carving rhinoceros horn. The Ministry of Supply and Trade had tried to formulate a plan of prosecution and penalties. There had been such a brisk turnover in the Ministry of senior officials in recent years, that papers and information tended to be mislaid.

Yemeni officials in various ministries and in the EPC agreed that the rhinoceros crisis should be publicised through the local media, especially on television, which Yemenis watch avidly. Officials were realistically a little more suspicious of the future success of their own efforts, almost fearing excessive interference in the livelihoods of the *jambiya* traders, which could result in problems. Past experience showed that the Government would need a great deal of assistance implementing its laws. In all areas of Government work in Yemen, it had been stated that it was a problem of "one step forward, two steps back", as ambassadors in the country agreed. For CITES and law enforcement to work, Yemeni officials would need substantive technical assistance and training, which they themselves requested. Greater co-operation among relevant officials and NGOs such as TRAFFIC, WWF and IUCN is required also to develop educational strategies, to lower demand for rhinoceros horn and to identify high quality alternatives.

International influences

Since the early 1980s one or two international conservation organisations plus the US Government have applied pressure upon the Yemen Government to reduce its trade in rhinoceros horn. Some Government action resulted in the 1980s with the ban on rhinoceros horn imports in 1982 and re-exports in 1987. Yemen witnessed political and economic upheavals in the early 1990s, and apart from prohibiting the domestic trade in raw rhinoceros horn in 1992, the Government did little until recently. However, in some eastern African range states such as Kenya and Tanzania law enforcement had been stricter since 1990. The rhinoceros horn trade had also been largely severed between southern Africa and Taiwan since 1992 due to more effective controls in both regions. As a result, the population of Africa's black rhinoceroses remained stable at around 2500 since 1992, and the number of white rhinoceroses had actually increased from 5820 in 1982 to 7800 in 1995. Generally, the recent successes of rhinoceros conservation in Africa

could not really be attributed to the trade bans in Yemen; they were useful for Yemen to counter the threats of international interventions. The successes were due to range states and other nations under pressure, enacting change. The legislation to control the trade was in place in Yemen. It remains an urgent necessity to ensure that laws are enforced and adequate penalties are introduced. The support that could follow by joining the CITES Convention would go some way to meeting this goal.

Economic factors affecting the demand for rhinoceros horn

If Yemen's economy had prospered in the 1990s, the demand for rhinoceros horn would likely have been far greater as the purchasing potential for new *jambiyas* with rhinoceros horn handles would have been higher. If the country were to become prosperous again to the extent seen in the 1970s for example, the demand for *jambiyas* with rhinoceros horn handles may increase once more. This makes it critical for Yemen to accede to CITES and dramatically improve enforcement.

Yemen's population of 15 million had been rapidly expanding, it was one of the highest population growth rates in the world. The infrastructure in the country was grossly inadequate, with a considerable shortage in electricity, water and sewage services (Anon., 1996). In January 1996, the Government began to implement major reforms to the economy with the support of the IMF who granted US\$190 million standby credit in 1996. The result was a steady exchange rate for the rial, a decrease in inflation, and a low national budget deficit. The Government had thus liberalised the economy to encourage foreign investment. But by 1996 little significant foreign investment had come into the country. Thus, at least for the next couple of years, Yemen will probably remain impoverished with little increase in the per capita income. The demand for new rhinoceros horn handles is unlikely to increase notably, as a large percentage of a person's income will be spent on the higher priorities of food, housing and qat.

Table 4

Exchange rates for the Yemeni rial to the US dollar, from 1970 to 1996

Years	Official rate	Black market / <i>souk</i> rate
1970-1984	5.00	5.50
1985	6.50	7.40
1986	7.25	9.70
1987-1989	9.75	12.50
1990	12.00	14.40
1991	12.00	24.60
1992	12.00	37.50
1993	12.00	50.80
1994	12.00	77.00
1995	50.00	115.00
1996	125.00	125.00

Note: where one value is given for a range of years there was little fluctuation around the values given.

Cultural factors affecting the popularity of new rhinoceros horn for dagger handles, and its use among craftsmen

Jambiyas have been part of a Yemeni man's dress for centuries. The importance of this traditional status symbol is undeniable. The majority of men in the north possess one and those handed down are heirlooms through generations. Rhinoceros horn was always considered the most prestigious material for a *jambiya*

handle. Little has changed in Yemen culture in this regard, and it remains the most sought-after substance for dagger handles. The demand for new rhinoceros horn handles, however, had fallen largely because most Yemenis could no longer afford them. The small number of wealthier Yemenis today, who could still afford a prestigious *jambiya*, chose older, second-hand daggers rather than those with new rhinoceros horn handles which were considered inferior. A Yemeni historian noted that increased westernisation in the future would reduce demand for *jambiyas*. It has been the case in other parts of Arabia that centuries of tradition are being lost due to the influences of more developed nations in the 'west'. The importance of *jambiyas* will hopefully never be lost to this trend; however, the declining emphasis on tradition may mean that alternative handle materials could become more acceptable. In Saudi Arabia and the eastern Gulf countries, daggers are now rarely worn on a daily basis. Yemenis, have remained particularly proud of their tribal traditions and long history. Westernisation is only partially accepted in Yemen. Only Yemenis who had been educated tended to prefer western dress, although most still owned a *jambiya*.

In order to prevent a continued decline in employment, in 1993 the main *jambiya* family requested that WWF should identify an alternative high quality material for *jambiya* handles. WWF attempted to have such a substance made in the UK, but failed because the synthetic did not have acceptable properties for crafting into handles. The use of agate was seen as a suitable substitute but craftsmen could use this in the traditional manner as heavy machinery was required. In 1995 the main *jambiya* family became more interested in financial compensation to start new businesses than alternative materials. That option would not be feasible and therefore another material should be identified which the *souk* craftsmen could carve for expensive dagger handles. Such a material must be introduced soon, in case the economy recovers, in order to help reduce future pressure on rhinoceroses.

Whilst the interest in *jambiyas* made of new rhinoceros horn was lower because the profit margin had fallen, the *jambiya* industry was growing and appeared destined to continue for a long time into the future. If manufacturing growth continued along with demand and Yemen found new prosperity, the likelihood for increased demand for rhinoceros horn would be high. In 1983 the average new rhinoceros horn dagger was priced at US\$600, in 1996 the price had halved, while the average handle size declined relatively little. In an improving economic climate of the future, rhinoceros horn could again fetch high prices, especially considering a declining availability of horn. In contrast, the price of old *jambiyas* with rhinoceros horn handles, rhinoceros horn shavings have been increasing, even though the price of African rhinoceros horn commanded roughly the same price at importation into Yemen whether the end product were medicines or *jambiyas*. While it would appear that the trade in old *jambiyas* was no longer a significant issue for the future of the rhinoceros, it could have indirect effects. The continued trade in old *jambiyas* perpetuates the cultural significance and importance of rhinoceros horn. Counterfeiting, making new horn handles appear old was also a possible problem, as the profit could be very large (there was some evidence of this practice). The increase in price of shavings was a concern, as this indicated demand was being maintained for supplying the East Asian traditional medicine market. The efforts to curb that trade in horn were not yet having an effect in Yemen as demand remained at least at the same high level for this commodity. If conservation efforts to dissuade use in such medicines were having any great impact, it could be assumed that the price of shavings in Yemen would at least remain static.

There was some bitterness among the craftsmen towards the international conservation community; some had stated that it was the case of "helping rhinoceroses and not the craftsmen". Since 1993 they had been asking for compensation for rhinoceros horn chips and shavings. In 1993 the traders requested compensation of US\$900 per kg for the 722.5kg stockpile, which was double the market price at the time. By late 1996 the traders requested US\$7000 per kg for 5500kg, more than 10 times the market value (a

total of US\$38.5 million). Almost all stocks of residual chips and shavings were from illegal sources, from horns smuggled into Yemen after the 1982 ban. Legal horn imported before 1982 would have virtually all been re-exported by 1987 as the demand was high in East Asia. For these two reasons, loans or other financial assistance would probably not be acceptable to the international conservation community. Therefore, in order to help those craftsmen who have lost their livelihood, a re-training programme should be considered.

Any genuine resentment towards the rhinoceros horn ban in Yemen should be eliminated through public awareness initiatives. Meanwhile, the international community needs to consider how to influence cultural factors against the use of rhinoceros horn. The reduced import volumes of rhinoceros horn entering Yemen today remains a serious problem for Africa and the rhinoceros. Apart from law-enforcement which would be hard to implement in Yemen, and besides relying on Yemen's negative per capita economic growth, a greater change in attitude is needed to make new rhinoceros horn unpopular. Greater publicity of the fatwa and influence from Yemen's elite would help. Cultural factors are the hardest to change, yet the most important in order to reduce long-term demand for rhinoceros horn in Yemen.

Public awareness: the male role and jambiyas

Until 1970 North Yemen was cut off from the outside world, with no cinemas, televisions, daily newspapers and very few book shops. In the late 1970s the great majority of men could neither read nor write and over 90% of the women were illiterate. It was thus hardly surprising that Yemenis had little knowledge of African animals, such as rhinoceroses. Although merchants buying rhinoceros horn and craftsmen filing it, knew the substance very well indeed, many had little idea of the animal that actually produced it. Most still refer to it as zarafa (Arabic for giraffe), although nowadays the craftsmen are aware that the horn in fact comes from the rhinoceros or wahid al qarn (the one with the horn). It could not be expected that if there were a general lack of knowledge, that there could be any concern for the plight of the rhinoceros.

It may be noteworthy to examine the role of gender in the cultural significance of the *jambiya*. Only males trade, manufacture and wear *jambiyas* in Yemeni society. The importance of this male hierarchy is pertinent to the issue. This is in stark contrast to the other major consumers of rhinoceros horn, the practitioners of traditional East Asian medicine where there are no gender-based influences which affect consumption, and where medicine is generally not a commodity of which women are deprived. The *jambiya* however, is the most significant cultural and status symbol in Yemen which is male dominated. Expression of male status in society is paramount, and the wearing of a *jambiya* of the best quality affordable is an issue that has to be met and understood if attempts at changing attitudes to rhinoceros horn use are to succeed.



Esmond Bradley Martin

Yemeni men wearing *jambiyas*

CONCLUSION

Since the early 1970s, Yemen has been one of the largest consumers of rhinoceros horn in the world. From a per capita point of view it has most likely been the biggest user. Since 1970 it can be estimated that 67 050kg of rhinoceros horn appear to have been imported, although the true figure could be significantly higher. That averages out to 2579kg per year. Based upon an average horn weight of 3kg, the number of African rhinoceroses which have been expended to meet this trade is approximately 22 350 over the last 26 years. From 1985 to 1992, Yemen's proportion of imports of rhinoceros horn on the world market declined due to the rise of East Asia as a major international consumer of rhinoceros horn. Despite a sharp contraction in the economy in Yemen since 1990, Yemen has once again probably been importing more rhinoceros horn than any other country in the world since 1993.

This demand for rhinoceros horns has been responsible for the loss of thousands of rhinoceroses, and linked to the death of hundreds of poachers, and tens of Government anti-poaching personnel. Poor African Governments have had to spend millions of dollars attempting to protect these animals, often with little success. The illegal rhinoceros horn trade has allegedly encouraged corruption and fraudulence in certain African countries and in Yemen. Concern about Yemen's continuing trade is not simply that of conservation NGOs - the direct cost is to African wildlife and African Government budgets.

During the early 1990s, far fewer Yemenis were able to afford *jambiyas* with rhinoceros horn handles compared to the previous two decades, thus demand fell sharply. Only a wealthy minority could afford such *jambiyas* and they preferred older daggers. Some educated people who could afford a new *jambiya* with a rhinoceros horn handle chose Water Buffalo horn instead, due to an awareness of the conservation problem and the trade ban. Nevertheless, demand remained sufficient to encourage the illegal imports of rhinoceros horn. The main *jambiya* family estimated that they could consume several hundred kilograms of rhinoceros horn annually, if it were available and if the price were not over US\$1200 per kg. The average price over the last decade was US\$1063 per kg. With smuggling into Yemen an easy procedure compared to eastern Asia today, Yemen remains a major market for rhinoceros horn. However, if Yemen's economy were to experience positive growth, demand for rhinoceros horn could once more thrive as more Yemenis could afford *jambiyas* with rhinoceros horn handles again.

The international community has been dismayed with Yemen for procrastinating over joining CITES for almost 10 years and for not attempting more effectively to reduce the rhinoceros horn trade. There has been some sympathy towards the Yemen Government for their inability to fight the problem due to Yemen's economic and political crises in the last few years. Now that the economy has been starting to improve and the Government has stabilised, progress in Yemen could start to be made. It is time for Yemen to take action immediately, and for the international community to assist Yemen where it can.

RECOMMENDATIONS

The following recommendations have been formulated to provide a basis for a productive review of possible solutions and contributions that could be undertaken if the required political, financial and infrastructural support can be achieved.

Domestic legislation

- Domestic legislation should be strengthened. Presently only internal trade in raw rhinoceros horn is illegal. Further clarification is needed in another decree stating that trade in and use of rough handle pieces is illegal also. The law needs to state that the internal trading in new *jambiyas* made from rhinoceros horn, and of handle pieces in the process of manufacture, is

illegal. The simplest enforcement method which could be employed would be possession controls. It would therefore be an offence to possess a *jambiya* made from new rhinoceros horn, resulting in confiscation. Stiff penalties should be imposed upon those trading in the *jambiyas* made from new rhinoceros horn.

- The Government of Yemen needs to introduce strict penalties against those people using new rhinoceros horn along with guidelines for the judiciary on how to implement the law. The penalties must instigate a significant deterrent factor.

Administration and monitoring

- Regular Government inspections of the *souk* al Janabi in Sanaa need to be made to check whether new rhinoceros horn is being used. Such inspections must also be conducted in Taiz and Dhamar. A bonus scheme for *souk* inspectors could motivate them to greater detection levels.
- The official registered stockpiles of rhinoceros horn should be uniquely marked in some form in order to improve control and avoid laundering from illicit sources under the guise of registered stocks.
- The registered stockpiles of rhinoceros horn should be examined on an annual basis by an independent authority to counter fraudulence and maintain the effectiveness of the marking system. The registration information should be copied to the CITES Secretariat.
- Consideration should be given for the Government to take greater control of the old rhinoceros horn stocks, perhaps by consolidating them in one specific secure facility.

Law enforcement

- The Government needs to formulate a comprehensive strategy to combat illegal imports of rhinoceros horn, the use of new rhinoceros horn and to facilitate co-operation between agencies.
- Co-operation between African nations and Yemen is required to prevent new rhinoceros horn from being smuggled out of Tanzania, Kenya, Ethiopia, Sudan, Djibouti and Eritrea by improving intelligence gathering in order to make Customs controls more effective.

Awareness

- Publicity in Yemen is needed again on the fatwa issued by the Grand Mufti prohibiting the killing of the rhinoceros for its horn.
- If Yemen joins CITES, the Government should educate the public that not only the importation and re-export of rhinoceros horn is illegal but the import and export of new rhinoceros horn daggers are also illegal, and old daggers can only be imported or exported with the relevant permits. Any strengthening of domestic controls such as possession controls should be relayed to the public using the media of television, regardless of Yemen's status in joining CITES.

Industry

- The Government of Yemen needs to enter into negotiations with the main *jambiya* family to encourage them to cease importing rhinoceros horn and to use alternative materials.
- Information needs to be disseminated to potential buyers of *jambiyas* that valuable *jambiyas* with

agate and jasper handles now exist. This information would be most effective if shown on Yemeni television.

- Fundraising by the Yemen Government with external assistance should be undertaken in an attempt to supply the necessary machinery to manufacture stone handles.
- A suitably valuable alternative material to rhinoceros horn should be sought which the *souk* craftsmen can carve in their traditional manner.
- The craftsmen producing *jambiya* handles of semi-precious stones, gold or other valuable substances should be assisted and encouraged to expand.
- A re-training scheme should be implemented with foreign assistance for those craftsmen who have genuinely lost their jobs because of the ban on the import and possession of rhinoceros horns.

Rhinoceros task force

- A task force should be created made up of experts on the rhinoceros horn trade, including influential Government officials, enforcement officers with invitations made by Yemen to pertinent experts from outside of the country. By allocating responsibility to the Rhinoceros Task Force, communications and follow-up over implementation of legislation would improve.
- The Rhinoceros Task Force should convene seminars made up of Government officers, *jambiya* craftsmen, the media and interested local and foreign NGO personnel, to discuss progress on the *jambiya* industry and reducing demand for rhinoceros horn.
- Monitoring of Yemen's internal and external trade must continue to provide a regular supply of baseline data, led by the Rhinoceros Task Force.

CITES

- Yemen should join CITES and sources for obtaining external funds need to be identified and approached for support in implementation.
- If Yemen joins CITES, a major training exercise needs to be implemented for Customs personnel, inspection officers, and officials of the management and scientific authorities of CITES in Yemen. Training should at least cover implementation and enforcement of CITES, implementation and enforcement of domestic controls, identification of rhinoceros horn, and identification of new rhinoceros horn: *jambiyas* in contrast to old *jambiyas*.
- Controls in the main transit points for rhinoceros horn in Africa and Arabia, especially Khartoum, Djibouti and Jeddah, need to be examined and tightened up as necessary.

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NOTES

¹ The terms "North Yemen" and "South Yemen" are used in this report when referring to the Yemen Arab Republic (YAR - from 1962 to 1990) and the People's Democratic Republic of Yemen (PDRY -from 1970 to 1990), respectively. Post 1990, the YAR and PDRY united to form the Republic of Yemen, called Yemen in the text.

² Interpretation of official import figures should be undertaken with caution. Importers of rhinoceros horn in North Yemen in the 1970s were required to obtain an import license, letter of credit from a bank, place a deposit of 20% of the value of the goods, and to complete the transaction within three months. From 1972, importers were further required to pay a 15% Customs duty, a 5% defence tax, 2% statistics tax and a YR50 calculation fee. Such constraints acted as inducements to smuggle rhinoceros horn into the country. Despite the legality of the trade pre-1982, North Yemen was probably importing three to four, rather than under three tonnes of rhinoceros horn a year according to data from the main *jambiya* family. When bans on the international rhinoceros horn trade were declared, following the species' listing in the CITES Appendices (from 1977), official statistics in international trade in rhinoceros horn often ceased to be recorded or were distorted by many countries.

³ The Pelly Amendment to the Fisherman's Protective Act (1968) is a legal instrument which the US government may choose to apply to countries undertaking activities seen to be undermining the effectiveness of international conservation treaties. The instrument allows imposition of limited trade sanctions against the country or countries to illustrate how strongly the views of the US government are held. The trade sanctions are lifted once the situation improves. The financial losses that may result for a country, in revenue from overseas trade and currency exchange, can be significant.

APPENDIX

Officials and academics met during the 1996 TRAFFIC visit to Sanaa, Yemen.

Abdulaziz Abdulghani Prime Minister's Office	Prime Minister
Khaled al-Adimi Ministry of Supply and Trade	General Director of Imports
Ismael Ali al-Akwa'a	Historian
Saleem O. Altamimi Prime Minister's Office	Director-General for External Relations
Abdulrhman Dahbali Prime Minister's Office	Chief of Protocol
Renaud Detalle	Political scientist
Mohamed al-Haymi Ministry of Industry	Deputy Minister of Industry
Gregory Hicks United States Embassy	Economics/Commercial Officer
Mohammed Ali al-Fousil Ministry of Legal Affairs	Deputy Minister
Abdul Karim al-Iryani Ministry of Foreign Affairs	Minister of Foreign Affairs
Mohamed Said al-Mashjery Environment Protection Council	Director General
Ahmed Mayad Environmental Support Society	Secretary

Arend Meerburg Netherlands Embassy	Dutch Ambassador
Franck Mermier Centre Francais d'Etudes Yemenites	Director
David Newton United States Embassy	United States Ambassador
Sadak al-Osamy	Environment Protection Council
Abdul Karim al-Saidi Ministry of Supply and Trade	Quality Department
Abdulaziz al-Saqqaf Yemen Times	Publisher and Editor-in-Chief
Douglas Scrafton British Embassy	British Ambassador
Ali al-Siaghi Ministry of Supply and Trade Abdul Karim Shuja'a Ministry of Supply and Trade	Vice Minister General Director of International Relations
Ahd al-Rahman Muhammed Ali Uthman Ministry of Supply and Trade	Minister
Ali Abdulla al-Wazir Ministry of Oil and Mineral Resources	Director General of Training
Abdul Rahman Zabarah Ministry of Supply and Trade	General Director, Control and Inspections

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The TRAFFIC Network is the world's largest wildlife trade monitoring programme with offices covering most parts of the world. TRAFFIC is a programme of WWF- World Wide Fund For Nature and IUCN-The World Conservation Union, established to monitor trade in wild plants and animals. It works in close co-operation with the Secretariat of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

The TRAFFIC Network shares its international headquarters in the United Kingdom with the World Conservation Monitoring Centre.

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