

AN ASSESSMENT OF
THE MARINE TURTLE
PRODUCTS TRADE
IN VIET NAM

DANIEL STILES

A TRAFFIC SOUTHEAST ASIA REPORT



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Cover: Viet Nam ivory carving usually includes subjects aimed at both the Chinese and local market

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Daniel Stiles



Daniel Stiles/TRAFFIC Southeast Asia

Mui Nai Beach had more outlets selling marine turtle products in 2008 than in 2002. It is popular with Vietnamese tourists

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GLOSSARY OF TERMS AND ACRONYMS

<i>bekko</i>	The Japanese term, used internationally, for Hawksbill Turtle shell
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CRES	Centre for Natural Resources and Environmental Studies, Viet Nam
HCMC	Ho Chi Minh City
IUCN	International Union for Conservation of Nature
MoFI	Ministry of Fisheries, Viet Nam
MTCAP	Marine Turtle Conservation Action Plan to 2010 in Viet Nam
RIMF	Research Institute of Marine Fisheries, Viet Nam
SSC	Species Survival Commission

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EXECUTIVE SUMMARY

Marine turtles have been protected in Viet Nam since 22 April 2002, first by Government Decree 48/2002/ND-CP and since 30 March 2006 by Circular 02/2006/TT-BTS of the Ministry of Fisheries, which supplements Government Decree 59/2005/ND-CP of 4 May 2005. These laws prohibit the catching and commercial exploitation of marine turtles and their products in Viet Nam.

Five species of marine turtle reside in Viet Nam's waters (Hawksbill Turtle, Loggerhead Turtle, Olive Ridley Turtle, Green Turtle and Leatherback Turtle), and four species are thought to nest on Viet Nam's beaches (all except the Loggerhead Turtle). Major nesting beaches are scattered from the northern border with China to the southern border with Cambodia, including most offshore island groups. Concentrated nesting areas are found in the Gulf of Tonkin, central provinces and the islands in the southeastern waters and the Gulf of Thailand, though many are under severe pressure from human activities and some no longer exist (Hamann *et al.*, 2006).

Up to the 1960s marine turtles nested in 13 of the 27 coastal provinces of Viet Nam (Hamann and Chu, 2003). With few exceptions, based on survey responses that are limited by memory of the informants, many eggs and nesting turtles have been collected for food, or in the case of Hawksbill Turtles, for their shell. With the exception of the nesting population of Green Turtles on the Con Dao Islands, it is possible that the number of Green, Hawksbill, Leatherback and Olive Ridley Turtles nesting in Viet Nam each year has declined significantly over the last thirty years. In the 1960s there were at least 700 Green Turtles nesting annually (Hamann *et al.*, 2006). Today, the only place where scuba divers can be assured of a marine turtle sighting is in the Con Dao National Park (Rainbow Divers, *in litt.*, 2008).

The largest current threats to marine turtle populations in Viet Nam are habitat degradation, the accidental and opportunistic capture by fishers and the direct take of nesting females and their eggs. The specific fisheries sectors that pose the greatest threat to marine turtles are bottom trawlers, long-line fishing and gill net operators and commercial crustacean and mollusc divers. Data from a joint survey (MoFI, RIMF and IUCN) in 2002 indicated that the combined take across the entire Vietnamese coastline amounted to approximately 4 000 marine turtles annually (MoFI, 2003). It is still uncertain what proportion was taken intentionally for trade or rather was accidental as by-catch (Hamann *et al.*, 2006). Whether intentional or not, Meylan and Ehrenfeld (2000) stated that “*Bekko* trade is considered to be the foremost cause of the Hawksbill's critical endangerment.”

The Hawksbill Turtle has been listed in the Appendices of the *Convention on International Trade in Endangered Species of Wild Fauna and Flora* (CITES) since the Convention entered into force in 1975, with the Atlantic population (including that in the wider Caribbean region) included in Appendix I. In 1977 the entire species was included in Appendix I. Japan acceded to CITES in 1980, but at the time took a reservation (legal objection) on the Appendix I-listing of this species. In the 1970s and 1980s, Japan imported hundreds of tonnes of Hawksbill Turtle shell (known as *bekko*) to supply its domestic carving industry. However, legal international trade in Hawksbill Turtles on a commercial scale effectively ended when Japan withdrew its reservation to the listing of the Hawksbill Turtle in July 1994.

The levels of trade in Hawksbill Turtle products and trends in this trade are very poorly known, and no comprehensive global review of the trade has been undertaken since the publication of Groombridge and

Luxmoore's (1989) review. Localized use of non-shell products appears to be widespread. Use of shell appeared to be driven by local markets, purchase of curios, and local commercial trade up to the mid 1990s. For instance, in 1993 and 1995, TRAFFIC, in collaboration with the Centre for Natural Resources and Environmental Studies (CRES) of the University of Ha Noi, undertook a study of the exploitation of Hawksbill Turtles in Viet Nam. Viet Nam had not appeared as a prominent supplier of shell to the Japanese *bekko* industry, despite the species having been heavily exploited for shell, food and medicinal ingredients. The study focused on Kien Giang Province, the Con Dao Islands, and Nha Trang, areas where turtle harvesting was known to occur. The study found that Hawksbill Turtles were being extensively exploited in Viet Nam, through egg collection and the capture of both juveniles and adults. The turtles are killed, sometimes after a period of captive-rearing, for use largely in the production of jewellery, decorative curios (e.g. stuffed turtles), and for traditional medicine ingredients (CRES, 1994). Another study about this time reinforced these conclusions (Baird, 1993; Le Dien Duc and Broad, 1995). In 2002, TRAFFIC (2004) found that the trade had extended into a large-scale wholesale export market.

The TRAFFIC 2002 study was carried out when marine turtle trade was still legal. Shortly after the conclusion of the TRAFFIC surveys the Viet Nam Government prohibited the use and exploitation of wild marine turtles with Government Decree 48/2002/ND-CP. In 2003 the government undertook an awareness campaign to educate relevant government agencies and souvenir business owners/managers that the sale of marine turtle products was illegal.

The Vietnamese Government, with assistance from IUCN, WWF, TRAFFIC and the Danish Government, formulated in 2004 a Marine Turtle Conservation Action Plan to 2010 in Viet Nam (MTCAP) (MoFI, 2004). To address the marine turtle commercial exploitation issue, the MTCAP called for the enforcement of the prohibition on the use of marine turtles and their products under Government Decree 48/2002/ND-CP, with specific actions to take being, *inter alia*:

- Expand the awareness programme started in 2003 aimed at fishers, fisheries, enforcement officers, customs and police that aims to raise awareness of existing legislation and illegal trade issues and continue this project for several years.
- Design and initiate an awareness programme aimed at business owners/managers involved in the illegal sale of turtle products that would raise awareness of existing legislation and illegal trade issues.
- Confiscate and destroy all marine turtle products that remain for sale in all stores and ware houses in accordance with the law.

This study assesses how well the above actions were implemented. In addition, it determines the current status of marine turtle product trade in Viet Nam and assesses trends that have occurred since the 2002 TRAFFIC study was made (TRAFFIC, 2004; van Dijk and Shepherd, 2004). The only two species that are involved in regular trade are the Hawksbill and the Green Turtle.

The following locations were surveyed between 4th April and 4th May, 2008:

Ho Chi Minh City (HCMC) 8 days

Vung Tau City 1 day

Phu Quoc island and Ha Tien (Kien Giang Province) 5 days

Nha Trang City (Khanh Hoa Province) 3 days
Hué City (Thua Thien Hue Province) 2 days
Ha Noi 8 days
Ha Long City (Quang Ninh Province) 2 days

The principle findings of the study are:

- Regular, large-scale wholesale exports of marine turtle products no longer occur, though occasional wholesale sales are made.
- The scale of the retail marine turtle market has decreased considerably since 2002 in six of the eight localities surveyed, and significantly in HCMC since 1993.
- Overall, the number of outlets selling marine turtle products has dropped from 116 to 84, and the number of items seen for sale has decreased from 22 225 to 5854 between 2002 and 2008 in the eight localities surveyed in the two TRAFFIC studies.
- HCMC, Vung Tau, Nha Trang and Ha Noi have seen significant reductions in marine turtle outlets and items for sale. Ha Tien has seen a significant reduction in the number of items for sale.
- Phu Quoc Island, Mui Nai Beach near Ha Tien and Ha Long City show modest scale growth in the marine turtle product market.
- The number of craftsmen engaged in marine turtle processing appears to have decreased marginally since 2002.
- The price of raw scutes purchased from fishermen in Ha Tien has decreased considerably from 1991 and moderately from 2002 in inflation-adjusted terms, while the price in HCMC has remained about stable since 2002. Informants in both localities reported that most scutes originate in Indonesia and Malaysia.
- The prices of small stuffed marine turtles have dropped in inflation-adjusted terms from 2002, and increased somewhat for the larger sizes.
- The prices for most worked *bekko* items have been decreasing since 1991 in real terms. There have been modest price rises mainly for those items employing pure *bekko*.
- The price of Green Turtle meat has increased significantly and the meat is rarer than in 2002.
- Informants everywhere reported a serious reduction in the number and size of marine turtles caught in Vietnamese waters.
- Given the great reduction in shell supply, the price decreases for worked items strongly suggests lowering demand for marine turtle products.
- Government enforcement of national laws and CITES in regard to marine turtle protection and

trade has been uneven and in general ineffective, except in Ha Noi.

TRAFFIC provided the government the results of this study and as a consequence the Department of Captured Fisheries and Resources Protection in the Ministry of Agriculture and Rural Development carried out a follow-up marine turtle trade survey in September 2008 in HCMC, Kien Giang Province and Nha Trang (Nguyen *et al.*, 2008). The findings of this survey were substantially the same as the TRAFFIC study. The government report recommended that legal action and penalties should be taken against those who participate in marine turtle trade. In addition, it recommended that awareness raising activities about the need to protect marine turtles should be carried out, concentrating in areas indicated as key trading localities in the report.

The Vietnamese Government also concluded that the effectiveness of the four-year implementation of the MTCAP needed to be evaluated to work out specific methods and actions to ensure the thorough implementation of the Action Plan.

RECOMMENDATIONS

Urgent action is required to prevent virtual extirpation of marine turtles in mainland coastal Viet Nam. In accordance with the *Marine Turtle Conservation Action Plan until 2010 in Viet Nam* (Viet Nam MoFI, Decision 175/QD-BTS, 8 March, Ha Noi) it is recommended to:

1. Enforce the prohibition on the use of marine turtles and their products by:

- expanding the awareness programme started in 2003 aimed at fishers, fisheries enforcement officers, Customs and police that aims to raise awareness of existing legislation and illegal trade issues and continue this project for several years.
- designing and initiating an awareness programme aimed at business owners/managers involved in the illegal sale of turtle products that would raise awareness of existing legislation and illegal trade issues.
- confiscating and destroying all marine turtle products that remain for sale in all stores and warehouses in accordance with the law.

2. Assess the socio-economic status of the most threatened communities/economic groups, as economic incentives drive the direct and opportunistic take of marine turtles in Viet Nam, by:

- conducting socio-economic studies in fishing communities and other businesses involved in the processing or trade of marine turtle products to determine the level and nature of dependence on marine turtle products.
- investigating solutions and sustainable alternative income generation for traders who are involved in the processing or trade of marine turtle products.

3. The Ministry of Fisheries should educate and inform relevant enforcement agencies about the serious impact that the trade in marine turtles has on wild populations, and of the need to protect marine turtle populations.

4. The Ministry of Fisheries should assist enforcement personnel to identify marine turtle species, parts and products. This could be facilitated by the publication of such tools as identification guides, for distribution to relevant personnel.
5. The Ministry of Fisheries and relevant partners, including NGOs, should cooperate with enforcement agencies in the training of field staff on the implementation and enforcement of CITES and relevant national law.
6. Government and NGO partners should continue monitoring the marine turtle trade in Viet Nam to measure the success of enforcement efforts and to keep abreast of changing market trends, trade routes and other relevant information. The current population status of all marine turtle species in the wild should continue to be monitored, and local individuals and organizations should be trained to carry out such monitoring projects.
7. The Government should make it mandatory for all fishing vessels to use Turtle Excluder Devices (TEDs) in Vietnamese waters in order to lower turtle mortality rates in accidental by-catch.
8. The government should comply with CITES regulations regarding the international trade of Appendix I-listed species.

INTRODUCTION

The Socialist Republic of Viet Nam has a coastline extending over 3260 km (about 1600 km in a straight line) spanning roughly 15 degrees of latitude, bordered on the south by Cambodia and in the north by China. Following the *United Nations Convention on the Law of the Sea* (UNCLOS) in 1982, Viet Nam is responsible for about 1 000 000 sq. km of maritime territory and an exclusive economic zone (EEZ), which includes more than 3000 near shore and offshore islands. The Viet Nam coast has a diverse range of habitats such as mangroves, coral reefs, inter-tidal areas, sandy beaches, sea grass and seaweed beds, and lagoon systems. Moreover, many of these ecosystems are diverse in structure and contain high levels of biodiversity.

Five species of marine turtle reside in Viet Nam's waters (Hawksbill Turtle, Loggerhead Turtle, Olive Ridley Turtle, Green Turtle and Leatherback Turtle), with four of these species thought to nest on Viet Nam's beaches (all except the Loggerhead). Major nesting beaches are scattered from the northern border with China to the southern border with Cambodia, including most offshore island groups. Concentrated nesting areas are found in the Gulf of Tonkin, central provinces and the islands in the southeastern waters and the Gulf of Thailand, though many are under severe pressure from human activities and some no longer exist (Hamann *et al.*, 2006).



Daniel Stiles/TRAFFIC Southeast Asia

Doi Moi is Vietnamese for Hawksbill Turtle. There was no doubt that this shop on Mui Nai Beach was selling an illegal product.

Although records of marine turtle distribution in Viet Nam were published early in the 20th century by Bourret (1941), further studies were not done until the 1970s (Nguyen Khac Huong, 1978), and detailed research only began in 1995. In 1995, Con Dao National Park and WWF began a research and monitoring project on the nesting population of marine turtles in the Con Dao islands (Nguyen Thi Dao, 1999). The exact population of marine turtles nesting each year along Viet Nam's mainland coast is unknown, though recent estimates suggest 250 to 300 female Green Turtles, fewer than 100 Olive Ridleys, and fewer than 10 Leatherbacks and Hawksbills (Tran Minh Hien, 2002; Hamann *et al.*, 2006). These data include the offshore islands, such as the Spratly and Paracel Islands, where Green and Hawksbill Turtles are thought to nest (Hamann and Chu, 2003).

Up to the 1960s marine turtles nested in 13 of the 27 coastal provinces of Viet Nam (Hammann and Chu, 2003). Based on survey responses that are limited by memory of the informants, many eggs and nesting turtles have been collected for food, or in the case of Hawksbill turtles, for their shell. With the exception of the nesting population of Green turtles on the Con Dao Islands, it is possible that the number of Green, Hawksbill, Leatherback and Olive Ridley turtles nesting in Viet Nam each year has declined significantly over the last 30 years. In the 1960s there were at least 700 Green Turtles nesting annually (Hamann *et al.*, 2006). Today, the only place where scuba divers can be assured of a marine turtle sighting is in the Con Dao National Park (Rainbow Divers, *in litt.*, 2008).

The IUCN-SSC Marine Turtle Specialist Group recently undertook regional assessments of marine turtle species for a global update of the IUCN Red List (Hutchinson *et al.*, 2006; IUCN, 2008) and it is preparing a *State of the World's Marine Turtle Report*, three volumes of which have already been published (see <http://www.seaturtlestatus.org>). Only three minor Hawksbill Turtle nesting sites are shown on its map for Viet Nam (Gulf of Tonkin, Gulf of Thailand and Spratley Islands) and none for Leatherbacks.

The MTCAP identifies the largest current threats to marine turtle populations in Viet Nam as habitat degradation, the accidental and opportunistic capture by fishers and the direct take of nesting females and their eggs. The specific fisheries sectors that pose the greatest threat to marine turtles are bottom trawlers, long-line fishing and gill net operators and commercial crustacean and mollusc divers. Data from a joint survey (MoFI, RIMF and IUCN) in 2002 indicated that the combined take across the entire Vietnamese coastline amounted to approximately 4000 marine turtles annually (MoFI, 2003). It is still uncertain what proportion was taken intentionally for trade or rather was accidental as by-catch (Hamann *et al.*, 2006). Whether intentional or not, Meylan and Ehrenfeld (2000) stated that “Tortoiseshell trade is considered to be the foremost cause of the Hawksbill’s critical endangerment.”

The main reason why Hawksbill turtles that survive being caught are not returned to the sea is the commercial value they hold in the manufacture of *bekko* items, including whole stuffed carcasses. The trade in tortoiseshell, also called *bekko*, thus threatens Hawksbill conservation. The meat of the Hawksbill is eaten, but it is not desired enough to be traded commercially (TRAFFIC, 2004).

Turtles, both marine and freshwater species, have been an important part of Vietnamese culture for centuries (Pham Thuoc, 2003). Uses include placing stuffed turtles in the foundations of homes for good luck, production of turtle shell products, production of traditional medicines and food. It should be noted that while international trade of marine turtle products has been illegal in Viet Nam since the Vietnamese Government became a signatory to CITES in 1994, prohibition of domestic use of marine turtles was not established until April 2002 (Decree 48/2002/ND-CP).

Hawksbill Turtles, which comprise most of the trade, have traditionally been exploited primarily for their shell and there has never been a significant international trade in other products from this species (though domestic use of various products exists). A market for *bekko* derived from the carapace and marginal scales of Hawksbill Turtles has existed for many centuries. A single turtle yields between 0.75 and 1.5 kg of *bekko* in the form of 13 carapace scutes, with an average yield of around 780 g. The 27 small marginal scales are less in demand (Groombridge and Luxmoore, 1989).

The Hawksbill Turtle has been listed in the Appendices of the *Convention on International Trade in Endangered Species of Wild Fauna and Flora* (CITES) since the Convention entered into force in 1975, with the Atlantic population (including that in the wider Caribbean region) included in Appendix I. In 1977

the entire species was included in Appendix I. Japan acceded to CITES in 1980, but at the time took a reservation (legal objection) on the Appendix I-listing of this species. In the 1970s and 1980s, Japan imported hundreds of tonnes of Hawksbill Turtle shell (known as *bekko*) to supply its domestic carving industry. However, legal international trade in Hawksbill turtles on a commercial scale effectively ended when Japan withdrew its reservation to the listing of the Hawksbill Turtle in July 1994.

The levels of trade in Hawksbill Turtle products and trends in this trade are very poorly known, and no comprehensive global review of the trade has been undertaken since the publication of Groombridge and Luxmoore's (1989) review. Localized use of non-shell products (e.g. meat and eggs) appears to be widespread but remains unquantified. Use of shell appears to be driven by local markets, purchase of curios, and local commercial trade.

The first published survey of wildlife markets in Viet Nam made in 1990/91 that provided prices found that *bekko* was widely sold in HCMC and Vung Tau city, though it was not mentioned as being found in Ha Noi (Martin, 1992). In 1993 and 1995, TRAFFIC, in collaboration with the Centre for Natural Resources and Environmental Studies (CRES) of the University of Ha Noi, undertook a study of the exploitation of Hawksbill turtles in Viet Nam. Viet Nam had not appeared as a prominent supplier of shell to the Japanese *bekko* industry. The study focused on Kien Giang Province, the Con Dao Islands, and Nha Trang city, areas where turtle harvesting was known to occur. The study found that Hawksbill turtles were being extensively exploited in Viet Nam, through egg collection and the capture of both juveniles and adults. The turtles are killed, sometimes after a period of captive-rearing, for use largely in the production of jewellery, decorative curios, and for traditional medicine ingredients (Baird, 1993; CRES, 1994; Le Dien Duc and Broad, 1995; TRAFFIC, 2004).

With the exception of the protected beaches on the Con Dao Islands and at Nui Chua, a significant, and mostly non-commercial harvest of nesting turtles and eggs still occurs for each species nesting in Viet Nam. TRAFFIC surveys carried out in 2002 have documented a substantial domestic market, and a wholesale export trade for marine turtle products (TRAFFIC, 2004; van Dijk and Shepherd, 2004). It is very likely that this trade has contributed significantly to a decline in marine turtle numbers in Viet Nam. This trade contravenes both national legislation and international conventions, such as CITES, to which Viet Nam is a signatory. Without effective enforcement of existing domestic and international measures to protect marine turtles, the five species found in Viet Nam waters, all of which are listed as either Critically Endangered or Endangered in the IUCN Red List of Threatened Species (IUCN, 2008), and all of which are listed in Appendix I of CITES, are unlikely to be found in Viet Nam in the near future.

Protection of eggs and nests are insufficient to restore Viet Nam's marine turtle populations (MoFI, 2003). In addition to the protection of nesting turtles and their eggs, a significant reduction in the mortality of juvenile and adult life stages is essential for the protection, preservation and restoration of marine turtles in Viet Nam.

International Trade

The working of *bekko* (technically marine turtle shell) into ornaments appears to have first begun in China over a thousand years ago. Historical trade of *bekko* to Asian markets was primarily to Japan, but also to the Republic of Korea and Taiwan (Groombridge and Luxmoore, 1989). *Bekko* crafts were introduced to Japan from China more than one thousand years ago. The Vietnamese *bekko* industry was also probably stimulated by China, but no study of the history of this craft has been conducted. *Bekko* processing in Japan became important in the Genroku Period (1688-1704 A.D.) in the Edo Era. Edo (Tokyo) was the centre of *bekko* craftsmanship, producing mainly combs and hair ornaments. *Bekko's* great expense restricted its possession to the wealthy, mainly the wives of feudal lords and wealthy prostitutes (Anon., 2000). During the Meiji Era (1868-1912), *bekko* craftsmanship expanded to produce cigarette cases and other boxes and miniature warship models, in addition to the traditional combs and hair ornaments. One source claims that the marketing of these products in Nagasaki and their exhibition overseas stimulated demand outside Japan and import-export trade in *bekko* became significant (Anon., 2000). Nowadays, Japanese *bekko* production is predominantly to meet domestic demand. *Bekko* combs remain an integral part of traditional Japanese wedding dress.

Raw Hawksbill Turtle scutes (plates) vary in thickness between one and three millimetres. To create objects larger or thicker than the scutes naturally allow, separate pieces of scute can be joined together through a process involving pressure, water and heat, which leads to the extrusion of a colloidal substance which acts as a natural glue (Anon., 2000). After the basic shape is formed, designs are carved and other materials are added to produce finished products (Milliken and Tokunaga, 1987).

The value of raw shell plates is determined by which part of the shell the scute comes from, the size of the scute, the colour and the country of origin (range State). There are three types of raw shell plate: dorsal; abdominal; and flank plates. Abdominal shell plates have a much higher value than other parts of the shell due to their amber-like colour. The price of raw shell plates ranged in Japan in 2000 from JPY 30 000 per kg (USD294) to JPY150 000 per kg (USD1 470) (see <http://www.cites.org/eng/prog/HBT/>).

Trade records indicate that Japan, the world's largest *bekko* consumer, legally imported a total of 641 531 kg of Hawksbill shell from 1970 to 1986 (Milliken and Tokunaga, 1987), but none of this was recorded as originating in Viet Nam (Groombridge and Luxmoore, 1989). Legal imports ceased in 1994 when Japan recognized the CITES Appendix I designation of marine turtles. Records show that Vietnamese *bekko* 1973-1985 was imported by Hong Kong, Republic of Korea, Singapore and Taiwan, but the shell was apparently of fresh water turtles (TRAFFIC, 2004).

TRAFFIC (2004) concluded that much of the Vietnamese *bekko* trade was international, a change from the CRES (1994) study, which found the industry to be mostly domestic. TRAFFIC (2004) recorded 61 *bekko* dealers in the country that had regular wholesale overseas buyers, most of them in East Asia (Taiwan, China, Japan and Hong Kong, in that order). There were also one or two wholesale buyers in the Republic of Korea, the USA, Singapore, Canada and Thailand. Wholesale was defined as 100 items or more in an order.

This study found that the main international trade component was the source of raw turtle scutes. Few Hawksbill turtles remain in Vietnamese waters and the scutes used in *bekko* manufacture are illegally imported from other South-East Asian countries.

LEGAL POSITION OF TRADE IN MARINE TURTLE PRODUCTS

There are a great many international conventions to which Viet Nam has acceded and even a greater number of government decrees and decisions that apply in some way to marine turtle conservation (see MoFI, 2003 for a listing and www.cites.org/eng/prog/HBT.shtml for details on international agreements to protect the Hawksbill, the species most threatened by trade). The most relevant legal instruments in respect to trade are:

Government Decree 48/2002/ND-CP – Prior to 22 April 2002 marine turtles could legally be exploited commercially in Viet Nam. Up to 30 March 2006 the Hawksbill, Green and Leatherback Turtles were listed under Group I, prohibiting their use and exploitation in the wild. Under this category, any special non-commercial use and exploitation must be proposed by the Minister of Agriculture and Rural Development and approved by the Prime Minister on a case-by-case basis. The Olive Ridley Turtle and Loggerhead Turtle were initially listed in Group I, but were later removed and placed in Group II, by Official Letter No. 3399. The five marine turtle species were removed from this list of endangered species by Government Decree 32/2006/ND-CP of 30 March 2006 because they are not forest species.



These scutes were purchased by a Ha Tien workshop for USD150/kg from fishermen. Most originate in Indonesia and Malaysia as Vietnamese marine turtle stocks are depleted

Circular 02/2006/TT-BTS dated 20 March 2006 of Ministry of Fisheries – This circular supplements Government Decree 59/2005/ND-CP of 4 May 2005 that outlines management and controls on marine resources. All but the Loggerhead Turtle are contained in Appendix 5 of this circular, which lists those marine species that are prohibited from commercial exploitation. Therefore, any trade in Hawksbill Turtle, Green Turtle, Olive Ridley Turtle and Leatherback Turtles is prohibited in Viet Nam.

CITES - All species of marine turtles have been listed in Appendix I of CITES since 1977. This listing prohibits their international trade except under special circumstances accompanied with specific permits. International commercial trade of marine turtles and their products is completely forbidden. Viet Nam has been a Party to CITES since 1994 and therefore has a legal obligation to ensure that no marine turtle species or their parts or derivatives, are exported, imported or re-exported. In Viet Nam, the chief agency responsible for implementing and enforcing the Convention is the CITES Management Authority, which is the Forest Protection Department, under the Ministry of Agriculture and Rural Development.

The ASEAN Memorandum of Understanding on Marine Turtle Conservation and Protection – Realizing that a coordinated regional approach to protect marine turtles and their habitats was needed the 19th Meeting of the ASEAN Ministers on Agriculture and Forestry in September 1997, Bangkok, Thailand, endorsed the Memorandum of Understanding (MoU) on ASEAN Marine Turtle Conservation and Protection. Countries that signed this MoU in Bangkok included Viet Nam, Brunei Darussalam, Indonesia, Lao PDR, Malaysia, the Philippines, Singapore and Thailand. Malaysia was designated the Regional Coordinator to lead the Technical Experts Working Group in the implementation of the MoU. The objectives of the MoU on ASEAN Marine Turtle Conservation and Protection are to promote the protection, conservation, replenishing and recovery of marine turtles and of the habitats based on the best available scientific evidence, taking into account the environmental, socio-economic and cultural characteristics of the Parties.

The Memorandum of Understanding for the Indian Ocean and Southeast Asia – This Memorandum was created to provide a wider regional agreement that would apply to more than just the ASEAN countries and include the entire Indian Ocean. This MoU also invites states that are not within the Indian Ocean-ASEAN region to become a signatory to the ASEAN MoU. Viet Nam became the ninth party to sign the MoU in July 2001. The objective of this MoU is to protect, conserve, replenish and recover marine turtle populations and their habitats. The Conservation and Management Plan outlines six main programmes, 24 sub-programmes and 104 activities. Importantly, this MoU calls for cooperation amongst nations, the implementation of the Conservation and Management Plan, and, when necessary, the review or establishment of legislation that will promote the conservation of marine turtles and their habitats within the Indian Ocean and South East Asian regions.

Although not strictly speaking legislation, the *Marine Turtle Conservation Action Plan to 2010 in Viet Nam* (MoFI, 2004) aims to implement many of the provisions contained in the national and international legal instruments presented above. The Plan recognizes the threat that illegal trade in marine turtle products poses to species survival and recommends certain actions to be taken. It proposes in regard to trade to:

- conduct socio-economic studies in fishing communities and other businesses involved in the processing or trade of marine turtle products in concentrated locations to determine the level and nature of dependence on marine turtle products.

- investigate solutions and sustainable alternative income generation for, and traders who involved in the processing or trade of, marine turtle products.
- expand the awareness programme started in 2003 aimed at fishers, fisheries enforcement officers, customs and police that aims to raise awareness of existing legislation and illegal trade issues and continue this project for several years.
- design and initiate an awareness programme aimed at business owners/managers involved in the illegal sale of turtle products that would raise awareness of existing legislation and illegal trade issues.
- confiscate and destroy all marine turtle products that remain for sale in all stores and warehouses in accordance with the law.
- determine the cultural, traditional, and economical values of marine turtles to fishers (consumptive and non-consumptive).

Table 1 presents the conservation status and levels of protection afforded to the five marine turtle species found in Viet Nam.

Table 1.
Conservation status of marine turtle species in Viet Nam

English name	Scientific name	Vietnamese name	VN Red Data Book	IUCN Red List	CITES Appendix
Hawksbill Turtle	<i>Eretmochelys imbricata</i>	Doi moi	E	CR	I
Leatherback Turtle	<i>Dermochelys coriacea</i>	Rùa da	E	CR	I
Green Turtle	<i>Chelonia mydas</i>	Vich	E	EN	I
Olive Ridley Turtle	<i>Lepidochelys olivacea</i>	Doi moi dua	V	EN	I
Loggerhead Turtle	<i>Caretta caretta</i>	Rua bien dau to	Unlisted	EN	I

Source: TRAFFIC, 2008; IUCN, 2008

- E Endangered
 CR Critically Endangered
 V Vulnerable

There is some confusion about the Vietnamese names for the different turtle species. The National Oceanographic Institute in Nha Trang in its marine turtle display room designates the Green turtle as *rùa xanh*, the Loggerhead as *du* and the Olive Ridley as *vich*. The Hawksbill (*doi moi*) and Leatherback (*rùa da*) terms seem agreed by everyone. An informant in HCMC stated that the Green turtle was called *vich* along the central coast, but in the south the correct term was *con dinh*. No one in the south interviewed used the term *con dinh*, though *con babá* was commonly used for the Green turtle, but the term more accurately refers to a fresh water turtle. Mark Hamann (*in litt.* 14 April 2008), an expert on marine turtles,

was queried about the identification problem. He replied, *inter alia*: “This was a constant problem during the entire turtle project. There are numerous local names and also loads of misidentification.”

METHODS

The aim of the investigation was to gather as much quantitative data as possible on indicators that reveal the scale and nature of the marine turtle trading system and degree of local demand for marine turtle products. The indicators are (i) prices of whole turtles and raw and worked *bekko*, (ii)

number of craftsmen engaged in processing marine turtles, and (iii) numbers of retail outlets and worked marine turtle items seen for sale in the outlets. In addition, the size and type of marine turtle items for sale was recorded and qualitative information about the sources of marine turtle products, transport destinations and methods, and buyers was collected.

Data were collected from locations where marine turtles were known or thought to be processed and/or sold determined from previous studies (Duc and Broad, 1995; TRAFFIC, 2004; van Dijk and Shepherd, 2004; TRAFFIC, 2008), from a review of recent guidebooks and from searching the Internet for locations of shops and markets where souvenirs were sold. A native Vietnamese speaker was located in each survey locale to accompany the principal researcher for much of the time to act as guide and interpreter. Most shopkeepers in tourist areas speak English, thus an interpreter was not always needed. Vendors were interviewed to ascertain from where they obtained the marine turtle products, how well they were selling in order to assess turnover, who the main buyers were and if they knew where any marine turtle workshops were located.

In spite of increased government surveillance of retail outlets since the TRAFFIC (2004) publication, some vendors were forthcoming with information. They provided useful information as to the whereabouts of craftsmen, which in turn resulted in details about the source and prices of marine turtle products. Most other vendors were uncooperative and did not wish to share information. All vendors seemed aware that it was illegal to sell marine turtle products, and many warned the researcher that it would be difficult to take items back to the home country.

Marine turtle workshops that could be located were visited and craftsmen interviewed in an attempt to find out where they obtained their raw material, what prices they paid and where they sold their products. They were also asked if they exported their products anywhere or if they sold on the Internet.



A workshop in Ha Tien supplies all of the *bekko* sold on Phu Quoc, and dealers come from HCMC and Vung Tau to buy.

Daniel Stiles/TRAFFIC Southeast Asia

Photographs were taken whenever possible; in most retail outlets and workshops this proved to be possible. The digital photographs of display cases containing *bekko* products could then be used to make accurate counts of items when these proved too numerous to record on site.

The presence and type of substitute items were also noted (plastic, mixed *bekko* and plastic, water buffalo horn). It was sometimes difficult to distinguish 100% *bekko* from items made from a mixture of *bekko* and plastic boiled in water and mixed together. Discrimination was based on vendors' statements and price, and whether tiny bubbles or imperfections could be seen in the plastic and mixed plastic imitation items. The researcher examined raw turtle scutes and *bekko* items under manufacture in workshops to become familiar with the genuine article. In general, plastic items are more translucent than 100% *bekko* pieces.

The data were analysed and the counts, types and prices of marine turtle items were broken down for display in tables to allow for standardized comparisons of the indicators between place and time. The retail prices used in this report are the asking prices, though a discount of 20-30% could be obtained with bargaining. Some shops gave prices in Vietnamese dong (VND) and some in US dollars (USD). Where VND were given, the exchange rate used is VND16 100 = USD1 (May 2008), though it varied slightly during the survey period.



Daniel Stiles/TRAFFIC Southeast Asia

These whole, stuffed marine turtles were for sale in downtown HCMC in an expensive tourist shop

The data from the current surveys were compared with those reported in the Martin (1992), Baird (1993), CRES (1994; Duc and Broad, 1995) and TRAFFIC (2004) surveys in order to assess changes that may have taken place in market scale and product demand. Except for number of outlets and items in HCMC in the Baird (1993) study, the 1990s data are only prices. It is assumed that work effort is comparable between the 2002 and 2008 TRAFFIC surveys and that all existing workshops and retail outlets selling marine turtle products were visited in the eight localities surveyed in common.

The Martin (1992), revised CRES (Duc and Broad, 1995) and 2004 TRAFFIC report presented all prices in USD. For purposes of comparison, therefore, all prices obtained in 2008 are reported in USD.

The International Monetary Fund (IMF) World Economic Outlook Database, October 2008, was used to account for inflation in consumer prices in Viet Nam from the early 1990s. The total inflation in prices to 2008 in VND from 1991 was more than 236%, from 1993 was 117%, and from 2002 it totalled 63% (IMF, 2008). The value of the VND has depreciated considerably against the USD since the early 1990s and slightly from 2002. For USD1, Martin used VND6825, Duc and Broad (1995) used VND10 000 and TRAFFIC (2004) used VND15 215. Baird (1993) did not provide price data.

Table 2 presents the inflation rate used in this report to describe inflation-adjusted price changes between the early 1990s and 2008, which is one of the indicators used to assess demand. The depreciation in per cent of the VND against the USD May 2008 exchange rate is subtracted from the inflation rate in VND in order to arrive at a more accurate inflation rate measured in USD.

Table 2.
Inflation rates used in this report from 1991, 1993 and 2002 to 2008 in Viet Nam

Year	VND total inflation	VND depreciation to USD	Real inflation in USD
1991	236%	58%	178%
1993	117%	38%	79%
2002	63%	5%	58%

Source for inflation: IMF 2008

The following locations were surveyed between 4 April and 4 May, 2008:

- Ho Chi Minh City (HCMC) 8 days
- Vung Tau City 1 day
- Phu Quoc island and Ha Tien (Kien Giang Province) 5 days
- Nha Trang City (Khanh Hoa Province) 3 days
- Hué City (Thua Thien Hue Province) 2 days
- Ha Noi 8 days
- Ha Long City (Quang Ninh Province) 2 days

RESULTS

This study aims to determine the current status of marine turtle product trade in Viet Nam and assess trends that have occurred since the 2002 TRAFFIC study was made (TRAFFIC, 2004; van Dijk and Shepherd, 2004).

This report deals primarily with the Hawksbill Turtle, as only this species is used in the manufacture of *bekko* items, and secondarily with the Green turtle, as its body is sometimes stuffed and sold. The meat of the Green turtle is also occasionally sold. No other marine turtle species was observed in commercial use in this study.

Trade in raw Hawksbill Turtle scutes

Only two raw scutes were found for sale, both in HCMC. The first was in a shop that specialized exclusively in *bekko* and worked ivory. A *bekko* workshop was in a back room. The scute for sale was light in colour and measured 18x12 cm and was mounted on a wooden stand. The price was USD200. Eight other raw scutes were in the showroom in view underneath a display case, but they were not for sale. The owner said she paid USD700/kg for scutes, and most of them came from Indonesia or Malaysia, with a few small ones obtained from Ha Tien in the south. This reported price should be treated with caution as it is considerably higher than reported in other recent surveys (TRAFFIC Ha Noi office, pers. comm., April 2008). The other shop in HCMC had only a 13x9 cm scute, but the vendor did not give a price and hid it after the researcher asked about it. This souvenir shop sold both worked *bekko* and ivory items.

Ha Tien was the only other place where raw scutes were seen. One shop carried 11 semi-worked scutes, cut into three cm blanks for finishing into pendants. They were USD 0.93 each. A *bekko* workshop had five whole scutes and other scute pieces that were being made into combs. The scutes were 14-20 cm long. One of the craftsmen said they paid USD150/kg for the scutes, which came mainly from Indonesia. They said scutes could rarely be obtained from Vietnamese Hawksbill (*doi moi*) these days, and those that could be were small.

It is probable that the HCMC informant was exaggerating the actual price to justify the high prices for *bekko* in the shop (the highest prices seen anywhere for some items). A Marine Programme officer in TRAFFIC's Ha Noi office said that she had found that scutes from Indonesia sold for USD200/kg, probably the more accurate price, though prices vary with quality.

Bekko processing workshops

A total of nine *bekko* processing workshops were found during the surveys employing at least 26 people in both supply provinces and urban demand centres. All of the marine turtle processing workshops were found in the south of the country. Informants in Hue and Ha Long City said that they purchased their *bekko* in the south. Table 3 summarizes their locations and presents estimates of their number and the number of craftsmen in each.

Table 3.
***Bekko* workshops identified during the survey, April-May 2008**

Location	No. of workshops	Min. no. of workers
HCMC	3	6
Ha Tien	2	5
Phu Quoc	1	1
My Xuan	1	10
Nha Trang	2	4
Total	9	26



Daniel Stiles/TRAFFIC Southeast Asia

This Hawksbill scute, displayed between two illegal ivory pieces, was for sale in HCMC for USD200

HCMC – One workshop was visited on Le Thanh Ton Street. This workshop employed at least four workers and had sophisticated electrical machinery for shaping and polishing *bekko* items. The showroom had a wide range of *bekko* items made in the workshop, including jewellery, hair clips and pins, combs, name seals, fans and spectacle frames were being manufactured during the visits here. The products were high quality and amongst the most expensive seen in Viet Nam. The two other workshops were not visited, although attempts were made, but were said by vendors to be small, home workshops that made mainly hair clips and combs.

Ha Tien – One workshop had only two craftsmen working during the visit, but there were places for more. They were making combs during the visit. The owner of the workshop, who was visited at his retail shop, said that he supplied *bekko* items for the other shops in Ha Tien and nearby Mui Nai Beach, all the shops on Phu Quoc Island and some of the shops in HCMC. The other workshop supplied mainly its own retail outlet in Ha Tien, which displayed over 1000 items, the most of any shop seen in Viet Nam, but that some *bekko* was also purchased wholesale by shopowners from HCMC.

Phu Quoc – The craftsman interviewed was not currently working *bekko*, due to a lack of scutes, and he was making jewellery and other items from mussel shell, coral, animal teeth and bone. He had 2-cm bone Buddhas selling for VND4000 (USD0.25) each. He said he had worked *bekko* in the past and could make something on commission if the buyer could supply the raw scutes. He reported that he knew of no other *bekko* craftsmen on Phu Quoc. Ham Ninh village was visited, as TRAFFIC (2004) reported that a shop there that sold *bekko* was owned by the daughter of a *bekko* craftsman. The shop was under new ownership and the vendor who had been working there since 2003 said she knew of no *bekko* workshop on Phu Quoc and the *bekko* in her shop came from Ha Tien.

My Xuan – An informant who had been born in Vung Tau City said in Vung Tau that there was a *bekko* factory in this small town about 40 km north in Tan Thanh District. The factory supposedly supplied Vung Tau and HCMC. He said it employed 10-15 craftsmen, but there was no time to visit it. No craftsmen were found in Vung Tau.

Nha Trang – Two workshops located in the rear of retail outlets were found close to each other in the vicinity of the port and National Oceanographic Institute. Neither of the owners would allow a visit and they expressed awareness that it was illegal to work and sell *bekko* and advised the researcher that he could have difficulty getting large amounts of *bekko* out of Viet Nam and into another country. They also said that they would not ship *bekko* for a buyer but the buyer had to take the *bekko* him/herself. One workshop owner said that they did not use many marine turtles a month, but would not specify a number.

Worked marine turtle products

A total of 5846 marine turtle products were found in 84 retail outlets in the eight localities surveyed (Table 4). The most *bekko* pieces were found in Ha Tien, followed by HCMC, Phu Quoc Island and Nha Trang. Ha Noi had a negligible amount of marine turtle products, perhaps because government vigilance was higher there than elsewhere. A total of 769 souvenir and antique shops were visited, including markets, hotels and department stores, and 10.9% contained marine turtle products, a relatively high percentage considering that the material is illegal to sell.

Table 4.
Numbers of outlets and items of marine turtle products, 2008

Place	No. of outlets surveyed	No. of outlets with products	No. of items
HCMC	251	22	1938
Vung Tau	17	12	165
Phu Quoc	26	5	835
Ha Tien	33	10	1995
Nha Trang	27	14	492
Hué	59	3	117
Ha Noi	227	8	42
Ha Long City	129	10	270
Total	769	84	5854

Table 5 presents a breakdown of the types of items seen by locality. The most numerous items were jewellery, especially bangles (2274 items) and rings (1000), followed by various types of hair clips, pins and bands (987 pieces).

Table 5.
Marine turtle products in Viet Nam

Product	HCMC	Vung Tau	Nha Trang	Phu Quao	Ha Tien	Hué	Ha Noi	Ha Long City
Bangle, 1-3 cm	435	51	131	112	166	39	17	67
Bangle, thin	119	26	83	167	246			53
Bangle, 7 thin	150	9	127	32	197	4		43
Bead bracelet	108	3	18	16	13	11	1	52
Bead necklace	34		7	21	4	6		15
Brooch/Pendant	4			26	86		2	
Earrings, pair	51		15			4	5	5
Finger ring	556		41	80	316	3	4	
Box	18				11			
Cigarette box	7			1	1			
Cigarette holder	24		12	30	38	5		
Cigarette lighter	1		4			3	4	
Comb	76		14	84	186	9		6
Hair clips, bands, & pins	135		19	213	581	15	6	18
Fan	6			3	6			
Handbag	6			4	3			
Name seal	13							
Pipe	5				27			
Spectacle frame	120		12	36	18	18	3	10
Stuffed Green Turtle	17	46	5		3			
Stuffed Hawksbill Turtle	18	30	4	1	55			
Misc.	35			9	38			1
Total	1938	165	492	835	1995	117	42	270

For Ha Tien, the total is a minimum number, as one shop with its own *bekko* workshop also sold wholesale and there were bags and packages with *bekko* items seen in the back of a display case.

The item types in Table 5 can be further broken down into sub-types. The 1-3 cm wide bangles were mostly complete *bekko* rings, but some, particularly the larger ones, would more accurately be termed bracelets, as they were not closed rings. Most were flat strips 1-2 mm thick and dark in colour, but some, more colourful ones were about one cm thick made of hollow tubes of thin *bekko*. Bead bracelets and necklaces were also made of this bright-yellow and dark brown papery material. The thin bangles ranged 0.2-0.5 cm wide and 106 of the 694 total were small, baby bangles and another 169 were 0.2 cm thin

bracelets with a *bekko* bead on each end. Some 562 bangles were actually seven, thin bangles tied together, usually with red string, but they were counted as one piece. Vendors said they brought good luck when worn.

The combs were 10-18 cm long and some had handles while others folded. Many were seemingly mixed with plastic and were counted, but those that looked all plastic were not counted. The same was the case with the various types of hair clips, bands and pins. These were types often imitated in pure plastic, and the researcher based a decision on whether to count pieces as *bekko* or not on the vendor's information, the prices and location of the items and visual inspection. *Bekko* pieces were always two to three times more expensive than similar plastic pieces and plastic items were often left in baskets or shelves out in the open. *Bekko* was usually kept in closed display cases, as it is a more valuable product.

Cigarette holders and lighters, pipes and name seals were made of buffalo horn or bone wrapped in thin *bekko*. Boxes and ladies' handbags were made of this same material, which appeared to be pure *bekko*.

Most of the 217 spectacle frames seen were made entirely of *bekko* or *bekko* mixed with plastic, but 58 of them were *bekko* on the top half and metal on the frame bottom.



Daniel Stiles/TRAFFIC Southeast Asia

A *bekko* workshop was found in downtown HCMC in plain view from the street. The lady is making spectacle frames. They do not fear a problem from the authorities for this illegal activity

Whole Marine Turtles – taxidermy specimens

A total of 71 whole, stuffed Green Turtles and 108 whole, stuffed Hawksbill Turtles were observed during the surveys. One Green Turtle and a 42 cm Hawksbill Turtle were also seen in Ha Tien, but were not included in the count as they were not for sale.

Most of the stuffed turtles ranged in lateral diameter 20-40 cm and many of them, particularly the Hawksbills, were very young individuals when they were killed. Vendors said it was rare these days to find a new marine turtle to stuff. Vung Tau had the most with 76, followed by Ha Tien (58) and HCMC (35). No stuffed turtles were found in Hué, Ha Noi and Ha Long City.

Retail prices

Table 6 presents prices obtained for various marine turtle products in the eight localities surveyed. For the same type item, prices varied considerably between outlets within localities and between localities. Overall, prices were highest in HCMC and cheapest in Ha Tien. The single most expensive item found was a giant stuffed Green turtle in Vung Tau, measuring about 70 cm in diameter, priced at USD621. A 56 cm in diameter Hawksbill in HCMC was selling for USD485. For same-sized turtles, Hawksbill were more expensive than Green. Discounts of 20-30% could be obtained on most items with very little bargaining, so the higher prices in the price ranges in Table 6 can in most cases be lowered to arrive at the final price.

Larger items made of pure *bekko*, such as fans and ladies' handbags, were quite expensive compared to other *bekko* items.

Buyers

The two most common buyers identified by retail shopowners/vendors were Taiwanese and Chinese, followed by local and US-based Vietnamese. Japanese, French, Russians and Australians were also mentioned as *bekko* buyers. The few buyers of European descent (Vietnamese vendors usually cannot distinguish European nationalities from Americans, Australians, etc.) more often bought fans and handbags made of pure *bekko*.

The only outlets that admitted they shipped marine turtle products to overseas buyers were both found in the An Dong Market in District 5 of HCMC. They said they exported to China, Hong Kong, Singapore, Europe, the USA, and virtually everywhere. One shop vendor, which displayed 27 stuffed marine turtles, said they sold 10-15 stuffed marine turtles a month, many to Taiwanese. She said they could pack and ship them for the researcher, if he bought some. One shop on Le Thanh Ton St. in HCMC said they last exported *bekko* to Poland, but that they had not exported any *bekko* now for over a year.

Turnover

Turnover of jewellery, hair clips and combs was high, according to vendors. These items had to be ordered every month or so. More expensive items, such as larger stuffed turtles, handbags and fans had a low turnover rate, and the last two types were bought more often by Europeans.

Bekko is much more popular in the south of the country than in the centre and north, and turnover from Nha Trang south is much higher than for Hué and Ha Noi. Ha Long City reported fairly high turnover,

particularly during national holidays when Vietnamese went there in large numbers, but sales still seemed slower than in the south. In general, even though more southern localities were surveyed, there were a greater number and more variety of *bekko* items in the southern study areas than the northern (Tables 4 and 5).

Table 6.
Retail prices in USD of worked marine turtle products in Viet Nam, 2008

Type	Size cm	HCMC	Vung Tau	Nha Trang	Phu Quoc	Ha Tien	Hué	Ha Noi	Halong City
JEWELLERY									
Bangle	0.3-0.5	3-7	2-4	3-4	4-6	2-9			9
Bangle	1	10-12	4-11	3-18	5-16	3-11	2-10	7-20	5-11
Bangle	2	18-32	7-17	6-22	12-16	8-10		38	10
Bangle, set of 7	0.2	10-48	5	4-25	6-9	4-5	9		8
Bead bracelet		4-10		7	5-6	5	7	6	10-11
Bead necklace		17-50		16-30	19-24				15-25
Earrings, pair	1-3	10-32							10
Pendant/brooch	3-5	5			2	3			
Ring		5-12		1	1	0.50-1		2	
OTHER									
Box	10	35-95			25	10			
Cigarette holder	5-8	5-9		12-17	4	3-4			
Comb	10-12	10-20		15-19	6-9	2-5			
Comb	15-18	22-38			10-19	8-16	8		12
Fan	30	175-250			93-112	90			
Hair clip	7-8	12-34		9	9-12	1-5	4-15	15	12
Handbag	22	450			300	217-280			
Name seal	6-7	9-12							
Pipe	8	6				9			
Spectacle frame		37-170			25	37	30		
Stuffed Green turtle	20-40	62-217	12-124	16-90		50			
Stuffed Hawksbill turtle	18-28	73-93	20-36	59-100	60	62-96			

Other marine turtle products

The only marine turtle product aside from stuffed turtles and *bekko* was Green turtle meat. In HCMC, no turtle meat was found in the Ben Thanh or An Dong markets, but the restaurant in the domestic airport departure area was selling a dish of braised Green turtle with Chinese medicines for VND200 000

(USD12.40). A restaurant in Nha Trang specializing in wildlife meat sold Green turtle meat at VND300 000/ kg (USD18.60/kg) that could be prepared according to the customer's wishes. No turtle meat was found in the main market. No turtle meat was found on Phu Quoc. A small amount of Green turtle meat was found in the Ha Tien market for VND100 000/kg (USD6.20/kg). The vendor said he sold about one turtle a day, though some days no turtle could be found.

Current Status of Localities and Retail Outlets

Ho Chi Minh City (HCMC)

The largest city in Viet Nam, this commercial and tourism centre attracts many business and tourist visitors, who are the main buyers of marine turtle products. Out of 251 outlets visited (including market stalls), 22 of them carried *bekko*. The 1938 items seen in these outlets comprised almost exactly one-third (33.2%) of all *bekko* seen in Viet Nam. HCMC had the most imitation *bekko*, i.e. pieces made of plastic, and buyers were frequently deceived in markets and department stores that advertised the plastic as real *bekko*.



Daniel Stiles/TRAFFIC Southeast Asia

Marine products, including *bekko* and stuffed marine turtles, were main items in tourist shops in Vung Tau

The majority of the items were bangles of various sorts, and the city had both the most bangles (704) seen in any locality in the country and the most bead bracelets and necklaces (142). Most of the stuffed turtles were found in two stalls in the An Dong Market (16 Green and 12 Hawksbills), with all the rest found in a shop in the Eden Mall in District 1 (1 Green and six Hawksbill). The shop vendor in Eden Mall said the stuffed turtles came from Nha Trang.

Dong Khoi Street had the most outlets selling *bekko*, with eight outlets with 519 items, followed by the An Dong Market, with five outlets carrying 307 items. The workshop showroom on Le Thanh Ton Street had the most pieces seen anywhere (666), but 484 of them were rings using only a small amount of *bekko*. The Eden Mall on Le Loi Street had two outlets selling 107 *bekko* items and two other shops on Le Loi Street displayed 21 *bekko* pieces. The ground floor of the ITC

building on Nam Ky Khoi Nghia Street has over 20 tourist souvenir shops, but only two of them sold 54 genuine *bekko* items, with hundreds more items of plastic imitation. The Ben Thanh Market, with nearly 100 souvenir stalls, had only one stall selling 98 real *bekko* items. The only other *bekko* item found was an old pair of sunglasses on Le Cong Khieu Street.

Vung Tau City

This seaside resort 128 km south-east of HCMC has reorganized the location of its tourist shops since the survey in 2002. The beach front in central Vung Tau used to have a long line of shops, which have been closed down and cleared out to clean up the beach area and make it look more attractive. Many of the shops have moved to a large building called the Sieu Thi My Nghe. Five outlets here were selling 82 *bekko* items, including 23 stuffed Green turtles and seven stuffed Hawksbill. Most were quite small and were the least expensive seen in Viet Nam. The other seven shops with 83 items were found scattered around the town. More than anywhere else, vendors said here that *bekko* was rare.

The beach to the south and urban area on the eastern side of the peninsula were also visited, but no shops were found selling *bekko*.

Nha Trang City

One of the most popular beach resorts in Viet Nam, with many offshore islands and a large fishing community, this small city has long been a centre of marine turtle catching and *bekko* working. Most of the outlets (10) selling 219 *bekko* items were found in and around the main market. Most of the stuffed turtles were also found here. The other four shops were located along Tran Phu Street, the beach road,



Daniel Stiles/TRAFFIC Southeast Asia

The investigator negotiated to buy 20 stuffed Hawksbill (left in photo) for USD100 each and eight Green (on right) for USD90 each in the Nha Trang market. They were the maximum number the vendors could supply on one day's notice. Although the available Hawksbill were smaller, they are more valuable than the Green

spread out over 10 km from the Cau Da port area to further north. The two shops with workshops in Cau Da carried 126 items, another shop had only a stuffed Green turtle and the last was a government-owned souvenir shop with 126 *bekko* pieces. When the researcher began asking questions about the *bekko*, the manager said that the pieces were buffalo horn, not turtle. This was obviously not true and she was no doubt aware that selling *bekko* was illegal.

Most of the items were jewellery (422) with a few hair items, cigarette holders and lighters and spectacle frames. There were only nine stuffed turtles.

The researcher visited the market three times to interview vendors and attempt to gather more information about the scale of the marine turtle market. The researcher asked what would be the maximum number of stuffed turtles he could buy. A buy was arranged in which the researcher was to purchase 20 stuffed Hawksbill Turtles at USD100 each and eight Green Turtles at USD90 each. The size ranged 20-30 cm. They were not at the market but would be brought from elsewhere. The interpreter-guide, very knowledgeable about Nha Trang, thought that they would come from the shops near the port. If this was the maximum number of marine turtles that could be found in Nha Trang, the market is not very large.

Phu Quoc Island

This tropical island with about 80 000 inhabitants lies in the far south of Viet Nam very close to Cambodia. The main industry is fishing and as recently as the 1990s marine turtles were commonly caught in nets as by-catch, which engendered a small *bekko* and stuffed turtle industry. Informants said that marine turtles were very rarely seen or caught today, but shops still sold *bekko*, obtained from Ha Tien on the mainland not far away. There is a burgeoning tourist industry, with most hotels located near Duong Dong, the main town and port on the island.



Daniel Stiles/TRAFFIC Southeast Asia

Bekko fans were for sale on Phu Quoc Island for USD93-112, much cheaper than HCMC

The largest of the five *bekko* outlets was a big souvenir shop on Tran Hung Dao road leading from Duong Dong to Ham Ninh village on the opposite side of the island. It was selling 247 *bekko* pieces, mostly jewellery and hair items. The airport departure lounge carried the second largest number with 181 items, again mostly jewellery and hair items. A shop in Duong Dong town sold 136 pieces, including the only stuffed turtle seen (a 22 cm Hawksbill for USD60), and a shop in a hotel owned by the same man sold 117 *bekko* items, including a handbag and fan. The hotel caters to local and



The *bekko* items in this shop in Ham Ninh village on Phu Quoc were made in Ha Tien. In 2002 TRAFFIC found that they were provided by the father of the former shop owner, who is now retired

foreign Vietnamese tourists, so the *bekko* was aimed at them. The only other outlet was a small shop near the Ham Ninh jetty, with 154 *bekko* items.

Many hotels were visited, and a trip was made to Ong Lang Beach and Mango Bay to the north, but no *bekko* was found. A scuba dive office was visited and asked about dive sites where marine turtles could be seen. They said there were no more marine turtles around Phu Quoc.

Ha Tien

This large town of about 50 000 inhabitants on the coast near the border with Cambodia has been one of the largest centres of the marine turtle industry in Viet Nam for more than 50 years. Its workshops are increasingly supplying many parts of southern Viet Nam with stuffed marine turtles and *bekko* as other Vietnamese marine turtle collecting and working localities reduce their involvement in the industry due to a lack of raw material. The town has an unusually high number of hotels to cater for the business people who visit the area to trade with Cambodia, and also for the Vietnamese tourists who come during the holidays to enjoy nearby Mui Nai beach. They provide a local market for *bekko*.

Ten outlets were found selling 1995 marine turtle products. Most of the items were found in the three outlets in the town, while the remaining seven were tourist stands on Mui Nai beach. The three shops in town were the same three businesses identified in TRAFFIC (2004). These shops are also wholesalers and two of them have their own family workshops.

During the previous survey in early 2002 it was still legal to capture marine turtles and use the products commercially within Viet Nam, so the informants were forthcoming to TRAFFIC with detailed information on the operations of the business. In 2008, however, the informants were well aware that they were engaged in an illegal business and they were much more guarded about their activities. For example, none would divulge how many marine turtles they purchased, processed or sold each year. They said only that there were no large marine turtles left in southern Vietnamese waters and that they bought their marine turtles and raw scutes from fishermen, who obtained them from fishermen of other countries out at sea. Indonesia and Malaysia were mentioned as main sources. Evidence to support the lack of Hawksbill turtles in Vietnamese waters was a report by the Philippines authorities that a Vietnamese fishing vessel had been boarded near Palawan, Philippines, and 101 Hawksbills had been found on board. The Vietnamese crewmen were being charged (Anon., 2008).

They also said that they did not export marine turtle products to other countries and that it was rare for foreigners to come to buy large quantities, though some came to buy small amounts for personal use. They said their *bekko* production was much smaller than previously and they could barely supply the domestic market demand. None would say how much they paid fishermen for whole marine turtles, saying that they rarely bought them now. Only the workshop craftsmen gave a price for scutes, reported above, of USD150/kg.



Daniel Stiles/TRAFFIC Southeast Asia

Ladies handbags, made of pure *bekko*, were priced at USD300 on Phu Quoc Island

One shop displayed by far the most marine turtle products, with 1022 pieces. They had 27 stuffed Hawksbills, 18-28 cm in diameter, for sale for USD71-87. These were quite small turtles and are indicative of the depletion of the stock. Only one 32 cm Green was for sale, with another 42 cm Green on the wall which was not for sale. There was a larger variety of *bekko* types seen here than anywhere else in Viet Nam, and some were unique. For example, there were meerschaum pipes with *bekko* stems and *bekko* shoe horns. The vendor affirmed that the outlet had its own workshop, but she said a visit to it would not be possible.

Another shop had the next most marine turtle products with 325, mostly jewellery and hair accessories. They also had 13 stuffed Hawksbill, 18-20 cm in diameter, and one Green 28 cm in diameter. The owner said he rarely bought whole turtles now because the fishermen were not catching them. He said he supplied a nearby shop and Phu Quoc island shops with all their *bekko*, and also supplied HCMC shops. There were bundled bags and packages in the display case of *bekko* items ready to be picked up. He said he owned a workshop and had to import the scutes, but would provide no further information, becoming somewhat suspicious of too much questioning. He did allow a visit to his workshop, however, and gave directions.

One shop used to be a major producer of *bekko*, starting about 50 years ago, but they have closed their workshop due to a paucity of marine turtles and rising prices for the raw material. Only 78 *bekko* items were for sale in the shop, including two 24 cm stuffed Hawksbill for USD62 each.

Most of the seven outlets on Mui Nai beach had only moderate amounts of marine turtle products for sale, ranging 62-84 items, but one larger souvenir shop had 259 pieces inside a glass display case, including 10 stuffed Hawksbills 20-26 cm in diameter. Most of the other items in this shop were the usual jewellery and hair accessories, but it also had two expensive fans and three 12 cm boxes, items usually seen only in the better shops. The vendor said the owner was not present and she knew nothing about the source of the products.

Hué

Hué served as Viet Nam's capital from 1802 to 1945 under the Nguyen Dynasty and it was a cultural and religious centre. The imperial tombs, pagodas and citadel attract many local and foreign tourists, which has engendered a thriving souvenir industry. All of the items in the dozens of curio stands associated with the tourist sites were cheap knick-knacks and no *bekko* was found. Only two antiques outlets in town were found selling a total of 72 *bekko* items, mostly jewellery, hair items and spectacle frames. The airport departure lounge shop carried 45 *bekko* items, all jewellery except for six hair clips.

Ha Noi

Ha Noi is the capital of Viet Nam and over the past 15 years, since economic liberalization began, the city has been transformed from a tranquil, charming city into a fast-paced centre of growth characterized by construction sites, new highways and heavy traffic. The recent boom has also attracted many more foreign business people and tourists and the number of antiques and souvenir shops has doubled since 2000, particularly in the Old Quarter. In spite of all of these potential outlets for *bekko*, of 227 surveyed only eight were selling 42 *bekko* items. The most pieces seen in any outlet were 13 in one hotel. Most vendors did not know where the *bekko* originated, but two responded Hai Phong. A shop on Hang Khay Street notorious for wildlife products has stopped selling marine turtle products. As recently as July 2006 the shop displayed 50 stuffed marine turtles and 150 other *bekko* items (TRAFFIC, 2008). The owner also said that she had none in stock. The Noi Bai airport departure lounge sold *bekko* products up to 2006 as well, but *bekko* was absent in 2008.

Ha Long City

This small town has been transformed from a sleepy backwater 20 years ago into a thriving tourist centre with dozens of high-rise hotels and expensive boat hotels and floating restaurants. The attraction is the magnificent Ha Long Bay in the Gulf of Tonkin with its 3000 or so islands, including Cat Ba Island and its biodiversity-rich Cat Ba National Park. The narrow coastal strip has been expanded by landfill to make way for development, which has disturbed former turtle nesting sites. Up to the 1980s Hawksbill nested at various beaches around Ha Long Bay, and fishermen used to catch the turtles and collect egg clutches. As many as 200 stuffed Hawksbill were shipped out of Ha Long Bay annually (Hamann *et al.*, 2006). Fishermen now settle these beaches and turtle-nesting is rare. In fact, no stuffed marine turtles were found anywhere in northern Viet Nam.

The main tourist shopping area is from the post office in the north to the end of the tourist strip in the south, a distance of about one km. Several tourist shops on both sides of the beach road were surveyed, along with about 100 stalls in the Cho Dem Ha Long (Night Market). Seven of the shops, some quite large, were selling 202 *bekko* items. The most in any outlet was 85, all jewellery except for eight spectacle frames. Only three souvenir stalls in the market carried 56 *bekko* items. Vendors said the *bekko* came from Hon Gai, across a bridge on the east side of the bay.

An extremely large souvenir shop between Ha Noi and Ha Long City was also surveyed. Most of the tour buses stop at this huge outlet, which carries a variety of Vietnamese craft items, but no *bekko* was sold here. The size and openness of the trade in marine turtle products in Viet Nam, as found during this study, demonstrates that legislation prohibiting such trade is being deliberately flouted.



Ha Long City increased the amount of *bekko* it was selling between 2002 and 2008, probably because of tourist development occurring there.

Trends in the trade of marine turtles

Numbers of outlets and items

There has been a modest reduction of about 28% overall of outlets observed selling marine turtle products between 2002 and 2008 in the eight localities surveyed in common in the two TRAFFIC studies, most pronounced in HCMC, Nha Trang and Ha Noi (Table 7). The reduction in the number of items seen for sale is much greater, with 74% fewer items observed. Large decreases in numbers of items for sale were also found in HCMC, Vung Tau, Nha Trang, Ha Tien and Ha Noi.

Phu Quoc Island and Ha Long City, however, have doubled the number of outlets selling marine turtle products with a corresponding increase of almost 58% more pieces in Phu Quoc and 44% in Ha Long City between 2002 and 2008. There has also been an increase in the number of outlets selling marine turtle products at Mui Nai Beach near Ha Tien from three to seven, but the overall number of items dropped from around 900 to 669. These are localities of both domestic and foreign tourism increases, which have raised demand for marine turtle products. Although the numbers are still quite modest, any trend upwards is a cause for concern.

In 2002 a total of 446 marine turtles were seen for sale in shops in the eight localities (280 Hawksbill and 186 Green). In 2008 only 179 stuffed marine turtles were found, 108 Hawksbill and 71 Green, an overall decrease of nearly 62%. This reduction unfortunately is likely to reflect the fact that there are fewer marine turtles in Vietnamese waters, and probably does not indicate a drop in demand.

Table 7.
Numbers of outlets and marine turtle products in 2002 and 2008

Locality	Number of outlets		Number of items	
	2002	2008	2002	2008
HCMC	36	22	13 365	1938
Vung Tau	11	12	3177	165
Nha Trang	25	14	4204	492
Phu Quoc	2	5	530	835
Ha Tien	13	10	5304	1995
Hue	2	3	143	117
Ha Noi	22	8	1149	42
Ha Long City	5	10	187	270
Total	116	84	22 225	5854

Source: TRAFFIC, 2004; van Dijk and Shepherd, 2004

The reduction in outlets and numbers of items was even greater between 1992 and 2008 in HCMC. Table 8 presents the data for the marine turtle product types reported by Baird (1993).

Table 8.
Number of outlets and items between 1992 and 2008 in HCMC

Category	1992	2002	2008
Outlets	99	36	22
Bangles	10 291	3 421	812
Boxes/purses	547	162	31
Combs	1 262	302	76
Fans	188	111	6
Hair pins	5 056	1 088	128
Lighters/holders	803	194	25
Spectacle frames	2 433	476	120
Stuffed turtles	99	59	35
Total	21 366	6 174	1 267

Numbers of workshops and craftsmen

Table 9 presents an estimate of the numbers of marine turtle product workshops and craftsmen in 2002 and 2008. It is not possible to compare reliably the data on numbers of craftsmen and workshops processing *bekko* collected in this survey with the data collected in 2002 (TRAFFIC, 2004). The 2004 TRAFFIC

report does not report systematically on workshops and craftsmen and the numbers presented in Table 9 for 2002 are estimates based on comments made in various parts of the 2004 TRAFFIC report. In 1993, CRES (1994; Duc and Broad, 1995) reported that there was only one *bekko* workshop in Ha Tien and one on Phu Quoc.

In the eight localities, there was a possible overall reduction in the number of workshops and craftsmen, but the number cannot be quantified. However, a large workshop with 10-15 workers was identified by an informant in Vung Tau, who said it was in My Xuan, near Vung Tau. If this workshop does indeed manufacture marine turtle products there would be little difference between 2002 and 2008.

Table 9.
The number of observed workshops and craftsmen involved in marine turtle processing in Viet Nam, 2002 and 2008

Locality	Number of workshops		Number of craftsmen	
	2002	2008	2002	2008
HCMC	2-5	3	5	6
Vung Tau	1?	0	1?	0
Nha Trang	?	2	?	4
Phu Quoc	1	0	1	0
Ha Tien	4	2	10 ?	5
Hue	0	0	0	0
Ha Noi	0	0	0	0
Ha Long City	0	0	0	0
Total	9-11?	7	27 ?	15

Prices of marine turtle products

Whole marine turtles

TRAFFIC in 2002 obtained various prices for marine turtles bought from fishermen, based on 10-cm units of the carapace maximum diameter. No such prices were obtained in 2008, as informants were reluctant to give details about their illegal activities. The retail prices for stuffed turtles were obtained, however, and prices can be compared. Table 10 shows a comparison of prices for three of the localities in 2002 and 2008, where the data were available.

CRES (1994) reported that small Hawksbills were selling in the Ha Tien area for USD10-15 per 10 cm. There has been 178% inflation since 1993 (table 2), when the price was collected, which results in the price being USD18-27 in 2008 USD. This price is less than that seen in 2008 in HCMC and Nha Trang, but more than seen in Vung Tau.

Some prices for whole marine turtles have gone up considerably in the three localities, principally for the larger sizes. The smallest turtle prices have gone up only marginally. Assuming the smallest ones to be

15-18 cm in diameter, the minimum price for Hawksbills per 10 cm has gone up from USD20 to USD26.50 in HCMC, gone down from USD14.65 to USD11.10 in Vung Tau and gone up from USD6.65 to USD29.50 in Nha Trang. The increase in prices of small Green turtles is quite modest. The highest prices seen in Table 9 for 2008 are for very large marine turtles.

Table 10.
Price in USD per 10 cm for stuffed turtles in Viet Nam in 2002 and 2008

Locality	Hawksbill turtles		Green turtles	
	2002	2008	2002	2008
HCMC	20-46.50	26.20-86.60	-	18.80-57.10
Vung Tau	14.65	11.10-22.50	6.65	9.70-88.70
Nha Trang	6.65-46.50	29.50-40	6.65	7.75-26

Scutes

In early 1991 Martin (1992) found in Vung Tau that raw scutes, originating mainly in Viet Nam and Singapore, were selling for USD132/kg. Raw scutes were for sale in Ha Tien in 1993 for USD150-350/kg, depending on quality (Duc and Broad, 1995). Low quality scutes used for comb manufacture were USD150/kg in Ha Tien in 2008. Given 178% inflation since 1991 and 79% inflation since 1993 (table 2), prices have therefore dropped significantly, suggesting a decrease in demand.

In 2002 only one price was reported in Ha Tien, of USD133.35/kg, and in HCMC of USD100-400/kg (TRAFFIC, 2004). In 2008 the price was still USD150/kg in Ha Tien. There was a large price rise reported in HCMC to as high as USD700/kg, according to an informant working in a workshop producing high quality *bekko* items. Inflation between 2002 and 2008 totalled 58% in Viet Nam (table 2), which would render the 2002 Ha Tien price USD210.70/kg and the HCMC price USD158-632/kg in 2008 USD. The price has therefore gone up somewhat in Ha Tien in real terms, while remaining roughly stable in HCMC.

Worked bekko items

Table 11 presents retail prices for common marine turtle items that are thought to be comparable in size and quality for 1993, 2002 and 2008. CRES (1994; Duc and Broad, 1995) did not give size information and TRAFFIC (2004) did not quantify the sizes of the price categories, but rather used qualitative terms such as ‘small’, ‘medium’ and ‘large’. An equivalency between size types was estimated given the knowledge of the various categories that are fairly standard throughout Viet Nam for Table 11.

Table 11.**Retail prices in USD of common marine turtle prices in Viet Nam, 1993, 2002 and 2008**

Type	1993	2002	2008
Bangle, 1 cm	2-3	2-3	2-20
Bangle, 2 cm		5-6	6-38
Bangle, set of 7 thin		1-25	4-48
Bead bracelet		1-17	4-11
Bead necklace		4-35	15-50
Box, 10 cm	54	45	35-95
Brooch		1-15	2-5
Cigarette box		5-40	10-25
Cigarette holder		3-12	3-17
Cigarette lighter		2-25	18
Comb, 10-12 cm	3-10	1-15	2-20
Comb, 14-16 cm	29	3-20	8-38
Earrings	2	1-3	10-32
Fan, 30 cm	15-80	45-100	90-250
Hair clip, 6-8 cm	1-2	1-12	1-34
Hair band, 25-30 cm		4-5	7-9
Name seal, 6-8 cm		6-15	9-12
Pipe, 6-8 cm		2-10	6-9
Purse (handbag)		110-150	217-450
Ring	2	0.50-10	0.50-12
Spectacle frame	3-80	7-120	25-170
Stuffed Green turtle, 20-40 cm		8.50-140	16-217
Stuffed Hawksbill turtle, 18-30 cm	30-60	10-140	20-100

There is still some overlap in unadjusted prices for many of the jewellery pieces 1993-2008, though in general these prices have understandably gone up given inflation. If one applies the inflation rates in table 2, prices for most items have been going down. Prices have increased in inflation adjusted terms only for those items using pure *bekko*, such as fans and ladies' handbags. Those categories in which plastic and *bekko* are sometimes mixed show in general price decreases between 1993 and 2008, suggesting that demand has been dropping.

Martin (1992) provided a few prices for marine turtle items found in HCMC and Vung Tau in 1990/1991. In HCMC the starting price for thin bangles was USD3, a 19 cm comb was USD30, spectacle frames were USD78 and a fan was USD78. In Vung Tau a one cm bangle cost USD7, spectacle frames were USD50

and a stuffed marine turtle (species and size unspecified) was USD50. When taking inflation into account, these items were much more expensive in early 1991, again suggesting weaker demand in 2008.

Summary

The raw and worked price data suggest that there has been a significant weakening of demand for *bekko* items between 1991 and 2008, with continuing but less pronounced decrease in demand 2002-2008. Demand for stuffed whole turtles has been stable.

The price of Green turtle meat has risen considerably since 2002 and the price in 2008 has placed Green turtle meat into the luxury category. In the Ha Tien market it has gone up from about USD2.50/kg to USD6.20/kg, an almost doubling of inflation-adjusted price. A Nha Trang restaurant price was USD18.60/kg and one dish in a HCMC airport restaurant (about 200 g of meat) cost USD12.40. This price rise probably indicates that supply has dropped considerably from 2002.

CONCLUSIONS

In May 2008 there was still active trade in marine turtle products in Viet Nam. This trade has contributed significantly to the great decline in numbers and size of marine turtles seen in Vietnamese waters. Marine turtles have almost disappeared from southern Viet Nam (Nha Trang, Phu Quoc Island and Ha Tien) and parts of the Gulf of Tonkin (Ha Long Bay). Even though a large proportion of the catch of marine turtles is accidental as by-catch (MoFI, 2004; TRAFFIC, 2004; Hamann *et al.*, 2006), in the absence of commercial value in the carcass and shell a certain proportion of the captured turtles would be released while still alive. The use of turtle excluder devices (TED) by fishing vessels would alleviate the high turtle mortality rates in by-catch.

Species protection legislation that prohibits the catching of marine turtles and possessing and trading in their products has apparently helped in reducing the scale of the marine turtle market in most places in Viet Nam. The word ‘apparently’ is used because the smaller market scale is probably due in part to the great reduction of marine turtles surviving in Vietnamese waters. Informants in all coastal localities reported that it was becoming rare to catch local marine turtles, especially the Hawksbill, and large marine turtles were virtually absent, except for Green Turtles in the Con Dao Islands.

Government enforcement of illegal marine turtle catching, processing and trading has been uneven. In Ha Noi, enforcement has been effective, as evidenced by the great decrease in number of outlets and marine turtle items. Most of the shops in the Old Quarter had stopped selling *bekko*, or had reduced the numbers displayed from 2002. Unfortunately, the government action had not extended to Ha Long Bay 165 km from Ha Noi. In Ha Long City there were more marine turtle outlets and items in 2008 than in 2002 (Table 7). In addition, a review of the Seizures and Prosecutions section of the *TRAFFIC Bulletin* from March 1997 to January 2008 showed that no seizures of marine turtle products has been reported by the Vietnamese authorities. In 2008, TRAFFIC reported the seizure of a Vietnamese fishing vessel in Philippine waters with 101 Hawksbill turtles illegally on board (Anon., 2008). These turtles were no doubt destined to enter the *bekko* trade in Viet Nam.

While the numbers of outlets and marine turtle items have decreased considerably in HCMC, there was little sign of law enforcement playing a role. A *bekko* workshop operated openly downtown in District 1,

with a street-front showroom displaying hundreds of *bekko* (and elephant ivory) pieces for sale. Marine turtle products were also sold openly in markets, shops and hotels around town. The An Dong Market had many stuffed marine turtles hanging from strings and on the walls. There has been a steady trend downwards in number of outlets in HCMC selling marine turtle, however, from 72 in 1992 (Baird, 1993), to 36 in 2002 (TRAFFIC, 2004) and to 22 in 2008. This is probably due more to lack of product than to law enforcement, as evidenced by the lack of any seizures being made by law enforcement personnel.

The same holds true for Ha Tien, long a known centre for marine turtle working and trading, and for Vung Tau and Nha Trang. Three shops in Ha Tien town and seven on Mui Nai Beach displayed hundreds of marine turtle products. The tourist souvenir area of the Nha Trang market and Vung Tau tourist souvenir building were selling whole stuffed turtles and *bekko* in plain view. In Nha Trang even a government-owned souvenir shop was selling over a hundred *bekko* items. Only the two workshops/outlets near the port in Nha Trang showed any sign of caution, yet they also openly displayed marine turtle products for sale. There is an awareness on the part of dealers that trafficking in marine turtle products is illegal, and several warned that trying to transport whole stuffed turtles out of Viet Nam could be a problem. However, there was no such concern about the smaller *bekko* items. On Phu Quoc Island the numbers of outlets and items have actually increased between 2002 and 2008.

In 2002 TRAFFIC found a considerable amount of large-scale wholesale marine turtle trading to foreign dealers from China, Taiwan, Hong Kong and South Korea. Large numbers of marine turtles were being processed annually, many for export. TRAFFIC (2004) estimated that 750-900 turtles in Ha Tien and 900-1400 stuffed Hawksbills and 1600 stuffed Green turtles were sold in Nha Trang in 2002, with in addition a middleman dealing in 500-700 Hawksbills. This level of trade was unsustainable and a regular wholesale export trade seems to be a thing of the past, though foreign visitors still buy a high proportion of the marine turtle products sold in Viet Nam. According to vendors, wholesalers buying large quantities no longer come.

Demand for marine turtle products seems to be steadily decreasing since 1991 based on the number of craftsmen still employed in processing and on the prices of raw scutes, stuffed turtles and *bekko* items. Prices in inflation-adjusted terms in 2008 dropped for raw scutes in Ha Tien from prices reported in the early 1990s and 2002, and remained about stable in real terms in HCMC. The inflation-adjusted prices for retail processed *bekko* decreased for most items in all surveyed localities, depending on the item type (Table 11). With such a significant drop in supply, and increased enforcement and stigma costs, this general retail price drop strongly suggests a decrease in demand. In summary, all the quantitative indicators support a conclusion that demand is dropping. However, vendors reported good sales for most marine turtle products, indicating that the trade still poses a serious threat.

The MTCAP (MoFI, 2004) called for the enforcement of the prohibition on the use of marine turtles and their products under Government Decree 48/2002/ND-CP, with specific actions to take being, *inter alia*:

- Expand the awareness programme started in 2003 aimed at fishers, fisheries enforcement officers, Customs and police that aims to raise awareness of existing legislation and illegal trade issues and continue this project for several years.
- Design and initiate an awareness programme aimed at business owners/managers involved in the illegal sale of turtle products that would raise awareness of existing legislation and illegal trade issues.

- Confiscate and destroy all marine turtle products that remain for sale in all stores and warehouses in accordance with the law.

TRAFFIC (2004) made similar recommendations, with more specific suggestions of which government agencies should carry out proposed actions in which locations.

Enforcement officers and business owners/managers are aware that it is illegal to capture, process and sell marine turtle products, largely as a result of an awareness campaign carried out in 2003, but *bekko* and stuffed turtles have not been confiscated and destroyed. Only in Ha Noi has additional awareness and enforcement activities been carried out, with the result that very few marine turtle products were found for sale there in 2008. Similar activities need to be carried out elsewhere. The *bekko* trade is continuing because the government does not appear to have the political will to enforce its laws. The MTCAP will be unable to achieve its objectives unless the government, working in conjunction with NGOs and international organizations, decides to place a higher priority on implementing the MTCAP recommendations.

TRAFFIC provided the government the results of this study and as a consequence the Department of Captured Fisheries and Resources Protection in the Ministry of Agriculture and Rural Development carried out a follow-up marine turtle trade survey in September 2008 in HCMC, Kien Giang Province and Nha Trang (Nguyen *et al.*, 2008). The findings of this survey were substantially the same as the TRAFFIC study. The report recommended that legal action and penalties should be taken against those who participate in marine turtle trade. In addition, it recommended that awareness raising activities about the need to protect marine turtles should be carried out, concentrating in areas indicated as key trading localities in the report.

The Vietnamese Government also concluded that the effectiveness of the four-year implementation of the MTCAP needed to be evaluated to work out specific methods and actions to ensure the thorough implementation of the Action Plan.

If marine turtles are to survive and recover in Viet Nam, the government will have to begin vigorously implementing the MTCAP and enforcing national laws and CITES regulations that protect marine turtles.

RECOMMENDATIONS

Urgent action is required to prevent virtual extirpation of marine turtles in mainland coastal Viet Nam. In accordance with the *Marine Turtle Conservation Action Plan until 2010 in Viet Nam* (Viet Nam MoFI, Decision 175/QD-BTS, 8 March, Ha Noi) it is recommended to:

1. Enforce the prohibition on the use of marine turtles and their products by:

- expanding the awareness programme started in 2003 aimed at fishers, fisheries enforcement officers, Customs and police that aims to raise awareness of existing legislation and illegal trade issues and continue this project for several years.
- designing and initiating an awareness programme aimed at business owners/managers involved in the illegal sale of turtle products that would raise awareness of existing legislation and illegal trade issues.

- confiscating and destroying all marine turtle products that remain for sale in all stores and warehouses in accordance with the law.

2. Assess the socio-economic status of the most threatened communities/economic groups, as economic incentives drive the direct and opportunistic take of marine turtles in Viet Nam, by:

- conducting socio-economic studies in fishing communities and other businesses involved in the processing or trade of marine turtle products to determine the level and nature of dependence on marine turtle products.

- investigating solutions and sustainable alternative income generation for traders who are involved in the processing or trade of marine turtle products.

3. The Ministry of Fisheries should educate and inform relevant enforcement agencies about the serious impact that the trade in marine turtles has on wild populations and the need to protect marine turtle populations.

4. The Ministry of Fisheries should assist enforcement personnel to identify marine turtle species, parts and products. This could be facilitated by the publication of such tools as identification guides, for distribution to relevant personnel.

5. The Ministry of Fisheries and relevant partners, including NGOs, should cooperate with enforcement agencies in the training of field staff on the implementation and enforcement of CITES and relevant national law.

6. Government and NGO partners should continue monitoring the marine turtle trade in Viet Nam to measure the success of enforcement efforts and to keep abreast of changing market trends, trade routes and other relevant information. The current population status of all marine turtle species in the wild should continue to be monitored, and local individuals and organizations should be trained to carry out such monitoring projects.

7. The Government should make it mandatory for all fishing vessels to use Turtle Excluder Devices (TEDs) in Vietnamese waters in order to lower turtle mortality rates in accidental by-catch.

8. The government should comply with CITES regulations regarding the international trade of Appendix I-listed species.

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TRAFFIC, the wildlife trade monitoring network, works to ensure that trade in wild plants and animals is not a threat to the conservation of nature. It has offices covering most parts of the world and works in close co-operation with the Secretariat of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

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