

Sea Sense Annual Report  
January – December 2009

**COMMUNITY-BASED  
ENDANGERED MARINE SPECIES CONSERVATION  
TANZANIA**

**ANNUAL REPORT  
JANUARY – DECEMBER 2009**

Prepared by  
**Lindsey West**  
Coordinator



PO Box 105044, Dar es Salaam

Tel: 022 266 7784

[info@seasense.org](mailto:info@seasense.org)

[www.seasense.org](http://www.seasense.org)



## CONTENTS

<b>Executive Summary .....</b>	<b>4</b>
<b>1. Introduction.....</b>	<b>5</b>
<b>2. Objectives.....</b>	<b>5</b>
<b>3. Implementation &amp; Results.....</b>	<b>5</b>
3.1 Dugong Conservation .....	6
3.1.1 Live Dugong Sightings .....	6
3.1.2 Dugong Mortalities .....	6
3.1.3 Dugong Snorkel Survey.....	8
3.1.4 Dugong Aerial Surveys .....	8
3.2 Turtle Conservation.....	8
3.2.1 Surveys of Turtle Nesting Beaches .....	8
3.2.2 Turtle Nest Monitoring and Protection .....	9
3.2.3 Tagging.....	10
3.2.4 Turtle Mortalities .....	11
3.2.5 Survey of Turtle Trade in Dar es Salaam .....	12
3.2.6 Turtle Ecotourism .....	13
3.2.7 Turtle Nest Adoption Scheme.....	15
3.3 Whale Shark Conservation.....	15
3.3.1 Awareness Raising with Fishers .....	15
3.4 Cetacean Conservation.....	16
3.4.1 Cetacean Sightings.....	16
3.4.2 Cetacean Mortalities .....	16
3.5 Community Participation .....	16
3.5.1 Conservation Officers.....	16
3.5.2 Turtle Nest Incentive Scheme .....	17
3.5.3 Village Meetings.....	17
3.5.4 Beach Management Unit (BMU) Meetings .....	18
3.5.5 Maziwe Island Stakeholder Meeting.....	18
3.6 Training.....	19
3.6.1 Marine Conservation Seminar .....	19
3.6.2 Friends of Maziwe.....	21
3.6.3 English Lessons .....	22
3.6.4 UDSM Students.....	22
3.7 Education and Awareness.....	22
3.7.1 DVD Presentations.....	22
3.7.2 Celebrating World Environment Day .....	23
3.7.3 Media and Magazine Releases.....	25
3.7.4 School Presentations.....	25
3.7.5 Dar es Salaam Charity Goat Races .....	26
3.7.6 Information Panels.....	26
3.7.7 Ecotourism Leaflets and Posters.....	27
3.9 Scientific Symposia and Workshops.....	28
3.9.1 International Sea Turtle Symposium .....	28
3.9.2 Dugong Workshop.....	29

3.9.3 WIOMSA.....	29
3.10 Funding.....	30
3.10.1 RECOMAP .....	30
3.10.2 US Agency for International Development (USAID) .....	30
3.10.3 Local Fundraising.....	30
<b>4. Problems Encountered .....</b>	<b>30</b>
4.1 Continuation of Illegal Activities.....	30
4.2 Limited Enforcement & Awareness .....	31
<b>5. Aims for 2010 .....</b>	<b>31</b>
<b>6. Immediate &amp; Long Term Benefits .....</b>	<b>32</b>
<b>7. Acknowledgements .....</b>	<b>32</b>

## **Executive Summary**

Between January and December 2009, 330 turtle nests (328 green and two hawksbill) were recorded by Sea Sense with 22,510 turtle hatchlings safely reaching the sea. This brings the total number of nests and hatchlings protected by Sea Sense to 2,169 and 150,927 respectively. Surveys of potential turtle nesting beaches were conducted in Tanga, Pangani and Muheza Districts. Four turtles were tagged and one tag was recovered. 221 dead turtles were found (either slaughtered or caught in nets) along the coast. A survey of the trade in turtle products in Dar es Salaam was conducted. Turtle ecotourism activities generated revenue in Mafia, Temeke and Pangani Districts. Six live dugongs were sighted by local fishers in Rufiji and Mafia Districts and reported to Sea Sense. Three dugongs were drowned in gill nets in the Rufiji Delta and four dead cetaceans were recorded. Whale shark awareness raising meetings were held with fishers in Mafia District. 'Village Olympics' were held in four villages in Rufiji District culminating in an awards ceremony on World Environment Day on June 5th. DVD awareness evenings were held in Tanga Region and six presentations were given to schools in Dar es Salaam. Four radio and T.V interviews were conducted and two press releases produced. Nine new Conservation Officers were recruited in Tanga Region and a training seminar held. Marine conservation activities were suspended in Rufiji and Kilwa Districts due to lack of funding. Illegal turtle slaughter, live coral mining, mangrove cutting and dynamite fishing continue to be practiced despite efforts to curb them.

## **1. Introduction**

The Tanzanian coastal region supports a diverse array of marine habitats, many of which are critical for the survival of coastal communities. There is significant pressure on marine and coastal resources related to high human settlement in the coastal zone coupled with high levels of poverty. High dependency on coastal resources has led to resource utilization at unsustainable levels and threatens the marine biodiversity of Tanzania and the livelihoods of coastal communities.

In recognition of this, Sea Sense, a community-based Tanzanian NGO, was set up in 2001 and currently operates in eight coastal districts in Tanzania. Sea Sense targets the conservation and promotion of flagship species (e.g. turtles, dugongs, whales, dolphins), whose continued survival is implicitly linked with the protection of the wider coastal and marine ecosystem. Activities started in Mafia District and in 2004, the scope of the NGO was scaled up to cover the entire mainland coast of Tanzania.

This report highlights activities and progress by Sea Sense during 2009.

## **2. Objectives**

The overall objective is to enhance the conservation status of marine turtles, dugongs, whale sharks and other species of conservation interest, as well as their habitats in Tanzania by assessing population abundance, distribution and threats, raising awareness and helping communities to find alternatives to unsustainable activities.

The specific objectives are to:

- contribute to dugong conservation by collecting data on population status, distribution and threats through aerial and PRA surveys; and to disseminate results to communities through awareness-raising activities;
- protect endangered marine turtles through supporting a programme of community-based nest protection and monitoring; conducting community awareness-raising; and promoting turtle ecotourism;
- contribute to protection of whale sharks and cetaceans through community awareness-raising;
- increase public awareness and education about the status and threats to marine resources in Tanzania;
- enhance multilevel national capacity for monitoring, research and management; and
- disseminate results to national and regional partners and the wider scientific community.

## **3. Implementation & Results**

A summary of results is presented in Appendix I.

## **3.1 Dugong Conservation**

### **3.1.1 Live Dugong Sightings**

There have been six live dugong sightings in 2009. Three of the observations were reported in Rufiji District, near to Ras Dima and the fourth near to Somanga in Kilwa District. Following the repeated sightings in Ras Dima, the Sea Sense Conservation Officer in Kiechuru and Kiechuru village leaders visited Ras Dima and talked to local fishers about the importance of conserving endangered marine species including dugongs. Following the meeting, the fishers revealed the name of the area that dugongs are frequently observed. Until then, fishers had been keeping the identity of the area secret for fear of the establishment of a Marine Park as it is known to be a productive fishing ground. The area is called Mwambandevu, located between Ras Dima, Nyaulili and Mangena-Nyamalile.

Two live sightings were also made on the west coast on Mafia, in October 2009. A fisher from Mafia contacted Sea Sense following repeated observations of a dugong in the shallow waters near to Tumbuju village. The Sea Sense team, together with the Mafia District Fisheries Officer conducted a patrol of the area to verify the report. The dugong was observed swimming in an area of shallow sea grass beds and was reported to be approximately 1.5 metres in length. Photographs and GPS coordinates were taken. Unfortunately the photos were of poor quality and did not show a clear image of a dugong.

Following the confirmed presence of a dugong in Mafia waters, the Sea Sense Field Officer arranged a meeting with Tumbuju Beach Management Unit (BMU) leaders to discuss strategies for reducing threats to dugongs from local fishing activities and ensure the fishing community understands the importance of dugong conservation. Unfortunately the meeting was cancelled by the BMU leaders due to their other commitments with the Collaborative Fisheries Management Areas (CFMA) process. Sea Sense staff will continue to communicate with BMU leaders to arrange a suitable meeting date and ensure appropriate measures are in place to protect a local dugong population.

### **3.1.2 Dugong Mortalities**

A mother and calf were reported drowned in a gill net in February by fishers in Ras Dima. Sea Sense was able to recover the bodies which were subsequently transported to Mafia for temporary storage in the TANPESCA processing plant. Arrangements were made for the specimens to be photographed and skin samples taken. The bodies were then buried for preservation of skeletons.



**Plate 1: Ventral view of drowned dugong showing wounds caused by gillnet**

Sea Sense wrote a press release to raise awareness of the threat to dugongs from gill nets and the Sea Sense effort to protect the last remaining population in Tanzania. The Sea Sense Education Officer also took part in a radio interview on Radio Uhuru to raise further awareness.

A third dugong drowned in a gill net between Ras Dima and Bweju, Mafia District, in March. The catch was reported to the Sea Sense Field Officer in Mafia who then visited Bwejuu Island to obtain further information. A meeting with village leaders confirmed that the specimen had been sold and eaten. Names of the fishers were not revealed.

Bwejuu village leaders reported that fishers are not prepared to report dead dugongs or surrender the bodies unless they receive a financial incentive to do so and loss of revenue from sale of the meat is covered. The Sea Sense Field Officer informed the leaders that Sea Sense is able to cover a modest incentive but nothing more as the sale of meat is illegal. Bwejuu is inside Mafia Island Marine Park (MIMP) and this information was passed to the Warden for further action and awareness.

Since Sea Sense commenced monitoring of dugong observations in 2004, 29 dugong sightings have been reported to Sea Sense. Of these, 17 were live sightings, 11 had drowned from capture in gillnets and one was washed up dead on a beach. A summary of dugong records in 2009 is shown in Table 1.

Date	Location	Sex	Length	Dead / Live	Reported by
04/02/2009	Ras Dima - Rufiji District	Female with female calf	3.1m & 1.5m	Dead	Fishers
20/03/2009	Somanga - Kilwa District	NA	NA	Live	Fishers
05/10/2009	Ras ya Mwamba mkuu - Mafia District	NA	1.5m	Live	Fishers
03/2009	Bwejuu - Mafia District	NA	NA	Dead	Fishers
06/10/2009	Ras Dima - Rufiji District	NA	NA	Live	Fishers
09/10/2009	Ras Dima - Rufiji District	NA	NA	Live	Fishers
16/10/2009	Ras Dima - Rufiji District	NA	NA	Live	Fishers
28/10/2009	Tumbuju - Mafia District	NA	1.5m	Live	Sea Sense staff

**Table 1: Dugong records, 2009**

### 3.1.3 Dugong Snorkel Survey

No snorkel surveys were conducted in 2009 due to lack of funding.

### 3.1.4 Dugong Aerial Surveys

An aerial dugong survey was planned for March but unfortunately was abandoned due to pilot cancellation.

The survey was rescheduled for November but was cancelled due to lack of sufficient funds.

## 3.2 Turtle Conservation

### 3.2.1 Surveys of Turtle Nesting Beaches

Rapid baseline surveys of the coast in Tanga Region were conducted by Sea Sense staff in January to prioritise sites for planned conservation activities under the RECOMAP programme. The type and distribution of critical marine habitats were identified as were potential turtle nesting beaches, areas of beach erosion and sites of illegal activity that may pose a threat to endangered marine species.

Surveys were undertaken along sections of coastline neighbouring 13 villages. The results of the surveys show that much of the coastline in Tanga District consists of rocky, mangrove-fringed beaches, habitat considered unsuitable for nesting turtles. The exception is a beach near to Mwarongo village which has 5km of sandy beach with high turtle nesting potential. In contrast, Pangani District has a higher proportion of sandy beaches with four beaches being identified as having high turtle nesting potential. The coastline in Muheza District is much shorter and is dominated by sandy beaches considered suitable for turtle nesting.

Since the initial surveys, a further nesting beach has been identified in Pangani District. In October, a local fisher reported a turtle nest to the Conservation Officer in Ushongo village and later guided the Sea Sense team to the nest on a recent field visit. According to the fisher, the beach is frequented regularly by nesting turtles but the nests are usually poached. The fisher had agreed to report any other signs of nesting activity and deter further poaching amongst the fishing community.

A survey of Maziwe Island was conducted in September. The need for the survey was identified following repeated reports from local fishers and tourism operators that turtle tracks are regularly observed on the island when it is exposed at low tide. In the 1970's, Maziwe Island was considered one of the most important breeding grounds for marine turtles in Tanzania and was a key nesting site for endangered olive ridley turtles. The Island has since submerged and turtles were thought to have ceased nesting there. On securing funding for marine conservation activities in Pangani District, Sea Sense recruited two COs to undertake regular patrols of the Island and translocate any nests to the mainland. 17 nests have been identified and translocated to the mainland since patrols began in April. Six nests hatched successfully. However, several of the nests failed to hatch and upon excavation, the eggs were found to have rotted. It is likely that the nests were inundated by the incoming tide before they were translocated. All nests were laid by green turtles. Since submergence, no further nesting records for olive ridley turtles have been made in Tanzania.

### 3.2.2 Turtle Nest Monitoring and Protection

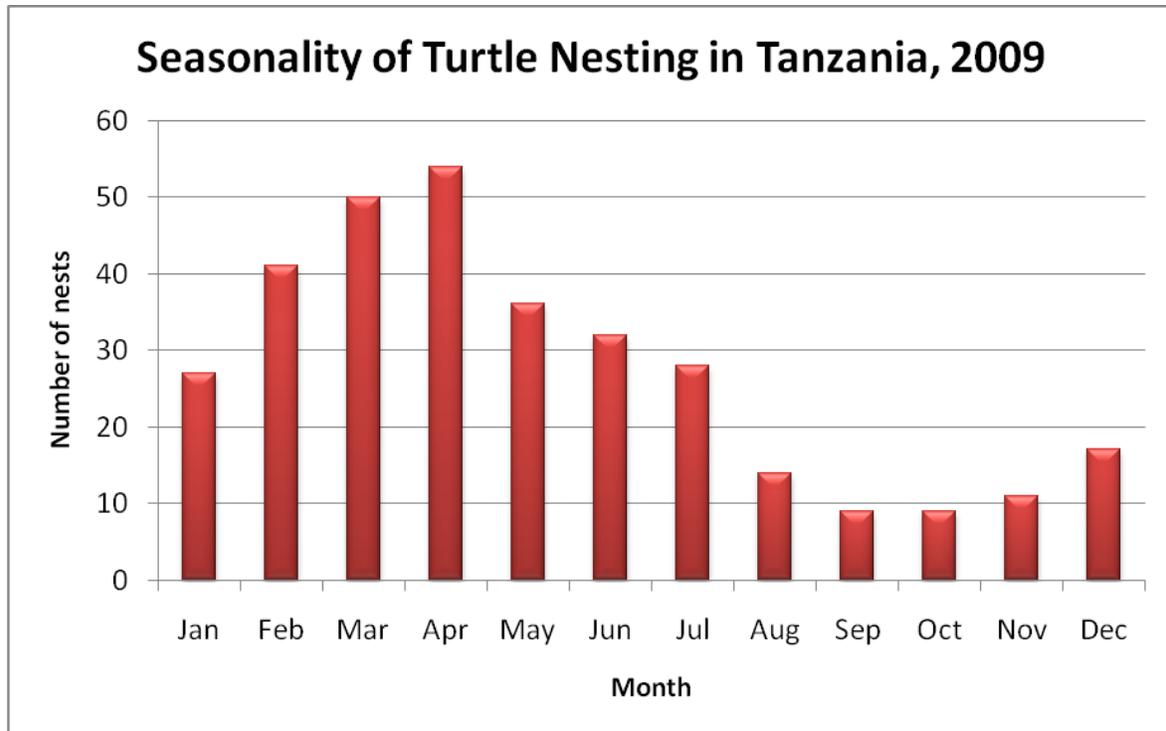
In total, 330 nests were recorded in 2009 with the successful hatching of 22,510 hatchlings. The overall hatching success rate was 74.84% (SD±17.91). 328 nests were laid by green turtles and two by hawksbills. 49 nests did not hatch, either because they were inundated by the high tide, poached, predated or the eggs rotted. Eight nests were partially predated but some hatchlings survived and hatched successfully. Since 2001, 2,169 nests have been protected by Sea Sense and 150,927 baby turtles have hatched and successfully reached the sea. Table 2 shows Sea Sense turtle nest data for 2009.

District	No. of nests laid	No. of hatchlings	No. of nests poached	No. of nests predated or partially predated	No. of nests inundated	No. of nests rotted	Nests still unhatched at end of 2009
Temeke	83	4,146	3	24	0	2	10
Mkuranga	9	875	0	0	0	0	0
Mafia	184	14,379	4	6	2	2	12
Kilwa	0	0	0	0	0	0	0
Rufiji	0	0	0	0	0	0	0
Pangani	51	2,995	3	1	10	0	3
Tanga	0	0	0	0	0	0	0
Muheza	3	115	0	0	1	0	0
<b>TOTAL</b>	<b>330</b>	<b>22,510</b>	<b>10</b>	<b>31</b>	<b>13</b>	<b>4</b>	<b>25</b>

Table 2: Turtle Nest Data, Tanzania, 2009

In addition, 26 nests were laid in 2008 but hatched in early 2009, resulting in 2,173 turtle hatchlings.

Figure 1 displays the monthly distribution of nests. The graph shows that turtles are nesting on Tanzania's beaches all year round. This clearly highlights the importance of the Tanzanian coast in providing key nesting sites for endangered marine turtles. As in previous years of nest recording, peak nesting months were March and April.



**Fig 1: Seasonality of Turtle Nest Distribution in 2009**

### **3.2.3 Tagging**

During 2009, Sea Sense tagged four green turtles with titanium flipper tags displaying ID numbers specific to Tanzania. Sea Sense also issued flipper tags to Mnemba Island turtle conservation project in Zanzibar.

Sea Sense tagged three turtles in Mafia District. In May, a green turtle was tagged whilst nesting on Kishiko Kikubwa beach, Juani. The same turtle returned to nest two weeks later on the same beach. A green and hawksbill turtle were caught in fishing nets and were reported to the Sea Sense Conservation Officer who tagged and released them.

A green turtle was tagged whilst nesting in Temeke District.

In June, one tag was recovered from a dead turtle by the Sea Sense Conservation Officer in Machui, Tanga District. The turtle was originally tagged in Kenya.

### 3.2.4 Turtle Mortalities

221 dead turtles were recorded washed up on Tanzania’s beaches or found floating at sea. Based on carapace determination, 164 mortalities were green turtles, 45 were hawksbill, three were leatherback, seven were olive ridley and two were loggerhead. Table 3 shows turtle mortality data collected by Sea Sense in 2009.

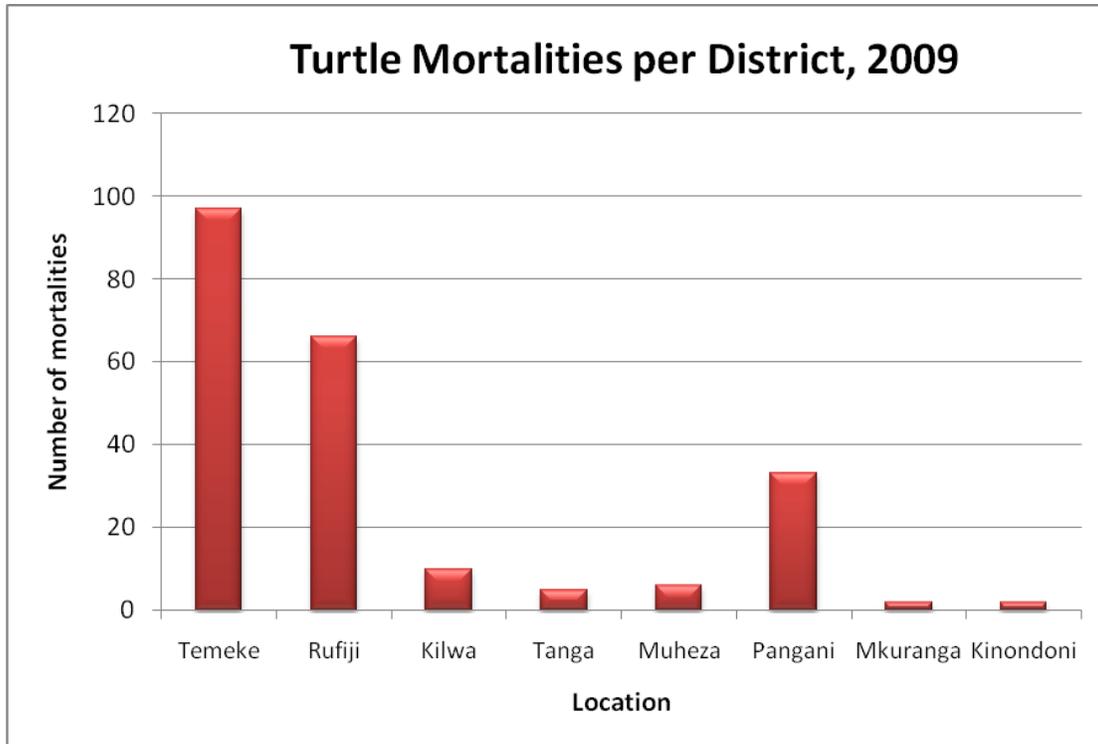
Location	Green	Hawksbill	Leatherback	Olive ridley	Loggerhead	Total
Temeke	79	16	1	1	0	<b>97</b>
Rufiji	44	20	0	1	1	<b>66</b>
Kilwa	9	1	0	0	0	<b>10</b>
Tanga	4	1	0	0	0	<b>5</b>
Muheza	4	2	0	0	0	<b>6</b>
Pangani	20	5	2	5	1	<b>33</b>
Mkuranga	2	0	0	0	0	<b>2</b>
Kinondoni	2	0	0	0	0	<b>2</b>
Mafia	0	0	0	0	0	<b>0</b>
<b>Total</b>	<b>164</b>	<b>45</b>	<b>3</b>	<b>7</b>	<b>2</b>	<b>221</b>

Table 3: Sea Sense Turtle Mortality Data, 2009



Plate 2: Sea Sense Conservation Officer collecting biometric data from a stranded turtle in Temeke District

Most mortalities were recorded in Temeke District (n: 97) and Rufiji District (n: 66). Figure 2 shows turtle mortalities per District.



**Fig 2: Turtle Mortalities Recorded per District by Sea Sense in 2009**

The average curved carapace length (CCL) of the stranded turtles was 60.7cm (SD±25.2) and the average curved carapace width was 53.8cm (SD±23.4). The CCL measurements are well below average carapace length for breeding green and hawksbill turtles (CCL 95cm and 87cm respectively) which suggests that Tanzanian waters, particularly in and around Temeke and Rufiji Districts pose a high risk to juvenile turtles.

55% of the mortalities were female, 30% were male and in 15% of cases, the sex was indeterminable.

A third of the stranded turtles showed evidence of knife injuries to the head and neck region. Eight turtles had had their flippers cut off. Evidence from others specimens suggested they had drowned in nets. Many were decayed so it was impossible to determine the cause of death.

### **3.2.5 Survey of Turtle Trade in Dar es Salaam**

In 2008, Sea Sense conducted a survey to assess the extent of the trade in turtle products (meat, shells and live specimens) in the Dar es Salaam area. The survey was repeated in

August 2009 to determine if the trade is increasing and identify the level of awareness of turtle conservation amongst the fishing community.

Surveys were conducted at eight fish landing sites and markets in Kinondoni and Temeke Districts: Kawe, Mbweni, Ununio, Kunduchi, Msasani, Minazi Mikinda, Mjimwema and Kigamboni Ferry market. Data was collected through group discussion and one to one interviews conducted by students from the University of Dar es Salaam. Over a period of eight days, the students visited landing sites and beaches and interviewed fishers and traders about turtle products, their availability and price. 39 questionnaires were completed during the survey period.



**Plate 3: Collecting data from traders in turtle products**

The survey concluded that turtle products (meat, shells, oil) are sold both openly and in secret at the main landing sites in the Dar es Salaam area. Fishers and traders are aware that it is illegal but due to the lack of enforcement there is no deterrent. Recommendations include prosecution of fishers and traders, better enforcement by Fisheries Officers and awareness and education among fishers and traders.

### **3.2.6 Turtle Ecotourism**

Juani Island in Mafia District and Amani Gomvu and Kimbiji villages in Temeke District are the main nesting sites in Tanzania for endangered marine turtles. Due to the presence of a number of hotels in the vicinity of turtle nesting beaches in Mafia and Temeke Districts, Sea Sense has implemented a turtle ecotourism initiative to generate a sustainable source of revenue for turtle conservation and local community development projects. Conservation Officers guide visitors to turtle nesting beaches and help to provide a safe and enjoyable turtle viewing experience, ensuring the welfare of the turtle hatchlings is protected. Visitors pay a modest fee to witness a turtle nest hatching event.

In early 2009, six hotels with ecotourism potential in Tanga Region were identified and preliminary meetings with four hoteliers were held to introduce the work of Sea Sense. The hoteliers expressed interest in turtle ecotourism and were keen to cooperate with Sea Sense. Since the initial meetings, turtle nest monitoring and protection activities have commenced and hatching events advertised to guests. Hundreds of people have had the opportunity to witness turtle hatching events including many local villagers who have never seen a turtle nest hatch before.



**Plate 4: Villagers and hotel guests in Ushongo watching a turtle nest hatching**

Meetings were held in May and June with Mafia Island Marine Park (MIMP), local hoteliers and Juani Village Council in Mafia District to discuss opportunities for improving turtle ecotourism on Juani Island to ensure financial sustainability and effective turtle conservation. Stakeholders were positive, despite the global economic downturn and increased marine park fees. Options discussed included: making turtle nests more accessible to tourists by moving some to the west coast of Juani Island; improving access routes to the key nesting sites on the east coast of Juani Island; removing unsightly flotsam and jetsam from nesting beaches; and building simple shade bandas and refreshment areas for tourists.

Meetings were also held with new managers at two lodges near to Amani Gomvu village in Temeke District to introduce Sea Sense and elicit support for the project.

During 2009, US\$1,580 was raised from turtle viewing fees and donations in Mafia, Temeke and Pangani Districts. Half of monies raised through turtle ecotourism are used to support Sea Sense activities. The rest of the revenue is used to fund local community development projects. Sea Sense has established a Village Environment Fund in Juani village in Mafia District and Amani Gomvu village in Temeke District.

### 3.2.7 Turtle Nest Adoption Scheme

Sea Sense has established a turtle nest adoption scheme to generate further revenue to support turtle conservation activities. A turtle adoption pack has been produced which contains an adoption certificate, a turtle poster, photographs of hatchlings, a children's game page and a bookmark. The pack provides information on turtle biology and life history, turtle conservation in Tanzania and the role of communities in turtle protection.

A turtle adoption costs \$50 or TSh 65,000. During 2009, 91 nests were adopted, generating \$4,550 (TSh 5,915,000).

In the longer term, Sea Sense is working towards a sustainable, stand alone turtle ecotourism initiative that will reduce the reliance on external donor funding and secure a valuable source of revenue for communities through turtle viewing fees, increased employment opportunities, sale of local handicrafts and economic benefits to small businesses.

## 3.3 Whale Shark Conservation

### 3.3.1 Awareness Raising with Fishers

Awareness meetings were held with fishers in Mafia District in June 09. The meetings specifically targeted night *dagaa* fishers but other fishers also attended. The objective of the meetings was to raise awareness among night *dagaa* fishing crews/captains about the importance of whale sharks and attempt to resolve the existing conflict between villagers and Mafia District Council over the distribution of revenue raised from whale shark ecotourism. Meetings were held in Kilindoni, Tumbuju and Mlongo and were facilitated by Ward Councillors, WHASCOS, RUMAKI, MIMP and a District Fisheries Officer. Meetings were also planned for Mfuruni, Jojo and Magemani villages but were cancelled due to lack of *dagaa* fishers in the area.

Attendance at the meetings was good and night *dagaa* fishers provided useful information on their interactions with whale sharks. The sharks are attracted to the bright lights of the fishing boat and several fishers claimed to interact with up to eight whale sharks per night, throughout the year, in the area between Bwejuu and Shungi-mbili.



Plate 5: Whale shark awareness meeting in Kilindoni

The fishers described the techniques they use to release whale sharks from their nets which include lowering the net so that the animal can escape, cutting a hole in the net or scaring them away by revving their engines. Night fishers denied using more physical means to release the shark due to fear of entering the water at night. They reported economic losses as a result of whale shark interactions including damage to nets, loss of fish due to damaged nets and increased fuel costs resulting from whale shark avoidance.

The night *dagaa* fishers also reported that many fisher / whale shark interactions occur during the day when ring net fishers use whale sharks to locate their target species. The fishers allegedly surround the shark with their nets, often causing the whale shark to become entangled in the net and use sticks to beat the animal out of the net.

### 3.4 Cetacean Conservation

#### 3.4.1 Cetacean Sightings

The Tanzanian coastline continues to be an important route for migrating humpback whales. Humpbacks spend approximately five months passing through the waters of Tanzania (August to December). Sea Sense Conservation Officers have been supplied with humpback whale recording forms. 39 sightings were recorded in Temeke District in September and October. Seven sightings were recorded in Rufiji District in September. Many of the sightings were of mother and calf pairs.

#### 3.4.2 Cetacean Mortalities

Sea Sense Conservation Officers collect data on cetacean mortalities during their daily patrols. In 2009, four mortalities were recorded, as shown in Table 4.

District	Date	Species	Length (cm)	Width at widest point (cm)
Temeke	05/01/2009	Unidentified dolphin	107	50
Temeke	12/01/2009	Unidentified dolphin	148	46
Mkuranga	23/06/2009	Unidentified dolphin	231	Unknown
Pangani	16/10/2009	Unidentified whale	Unknown	Unknown

Table 4: Cetacean mortalities recorded by Sea Sense in 2009

### 3.5 Community Participation

#### 3.5.1 Conservation Officers

In March and April, village elections were successfully held in nine villages in Tanga, Pangani and Muheza Districts to recruit new Conservation Officers. Interested individuals were invited to submit a written application describing why he/she was eligible for the position and what qualifications he/she had to meet the criteria. Criteria included: literacy; residency of the village; personal knowledge of the local area, in particular coastal and marine habitats; residing near to the beach; and voluntary commitment. A village electoral meeting was then convened

during which each applicant presented their application verbally, justifying their suitability for the position. Villagers attending the electoral meeting voted and the applicant with the most votes was elected for that village.

To ensure effective targeting of resources, the number of COs was reduced in early 2009. Four COs were removed from Kilwa District, five from Temeke and two from Mkuranga. A new CO was elected in Songomnara, Kilwa District and he received practical and theoretical training from the Sea Sense team in March.



**Plate 6: Sea Sense training session, Songomnara, March 09**

Due to a lack of funding, a further four COs were removed from Kilwa and Rufiji Districts in June. Funding for activities in these Districts ended completely in December 09. Hence, there are no longer any COs conducting marine conservation activities in Rufiji or Kilwa Districts.

Sea Sense currently has a network of 32 trained Conservation Officers (COs) who conduct daily patrols to collect data on endangered marine species and illegal activities and raise awareness in their communities. COs operate in Mafia (6), Temeke (13), Mkuranga (4), Tanga (2), Pangani (6) and Muheza (1) Districts.

### **3.5.2 Turtle Nest Incentive Scheme**

Sea Sense operates a nest incentive scheme whereby small financial incentives are given to villagers who report turtle nests. Incentives consist of a founder incentive of TSh 5,000, TSh 100 for every egg that hatches successfully and TSh 50 for every egg that fails to hatch. The scheme has proven to be a successful way of involving local communities in turtle conservation and enhancing perceptions of the value of live turtles.

### **3.5.3 Village Meetings**

Village meetings were held in eight villages in Tanga, Pangani and Muheza Districts in February to introduce Sea Sense proposed activities under the RECOMAP programme.

During the meetings, Sea Sense staff briefed the councils on Sea Sense aims, objectives and achievements to date and introduced the planned activities. The village councillors were mostly receptive to Sea Sense commencing work in their community and were keen to hear how Sea Sense intended to engage with their communities. However, some were more reluctant to participate in Sea Sense planned activities. This reluctance was most likely due to the fact that many coastal communities in Tanga Region continue to engage in illegal turtle slaughter and consumption and therefore do not welcome a conservation project aimed at halting these activities.

Regular meetings were also held in villages where Sea Sense is currently conducting ongoing marine conservation activities to ensure that communities remain fully aware of and engaged in Sea Sense activities. Issues relating to marine conservation in general and more specifically endangered species, illegal fishing, coral mining, mangrove cutting and sea cucumber exploitation were discussed.

#### **3.5.4 Beach Management Unit (BMU) Meetings**

In July Sea Sense held meetings with local BMU leaders in Pombwe, Kiechuru, Mbwera and Jaja in Rufiji District to promote the importance of endangered species conservation. Sea Sense staff have continued to meet with BMU leaders during the reporting period to exchange information and ensure all are updated on Sea Sense activities. Most BMU leaders in Rufiji District have reported good progress and support Sea Sense aims and objectives.

Sea Sense was consulted on draft Collaborative Fisheries Management Areas (CFMAs) guidelines and continues to liaise with local BMU leaders to ensure endangered species conservation measures are incorporated into local village action plans to enhance sustainable conservation, management and development of coastal resources.

#### **3.5.5 Maziwe Island Stakeholder Meeting**

Due to high pressure on coastal and marine resources in Tanzania, the waters around Maziwe Island Marine Reserve have become a regular fishing ground despite being protected under Marine Park legislation. Illegal fishing vessels can be seen on a regular basis within the marine reserve boundaries and dynamite fishing is known to have occurred there in the past. Nesting turtles have been slaughtered by illegal fishers and nests are frequently poached. The endangered olive ridley turtle, once a frequent nester on Maziwe Island, no longer nests in Tanzanian waters.

Enforcement patrols have had little success in controlling illegal activities, causing conflict amongst stakeholders. In addition, many tourists are dissatisfied with their Maziwe Island experience as they witness fishing within the Reserve, damaged reefs and occasionally slaughtered turtles.

To address these issues, Sea Sense convened a preliminary meeting of key stakeholders in early February. The objective of the meeting was to agree and prioritise management issues surrounding Maziwe Island and identify roles and responsibilities of key stakeholders. Following discussions at this meeting a number of initial actions were identified and completed by relevant stakeholders including the compilation of existing data on Maziwe Island, the production of a visitor questionnaire and a Maziwe newsletter.

To build on the outputs of the preliminary meeting, a second, larger stakeholder meeting was convened by Marine Parks & Reserves Unit (MPRU) in June to discuss strategies for the conservation of Maziwe Island Marine Reserve. Over 50 stakeholders including local fisher groups, village councils, District Staff, NGO's, hoteliers and law enforcement officers attended the meeting.

Dr Chande, Manager of MPRU, outlined the challenges facing the future of Maziwe Island Reserve including illegal fishing within the reserve, stakeholder involvement in management strategies, turtle protection and communication issues. Participants were invited to form small groups to discuss and exchange ideas and develop possible solutions to these challenges. Valuable contributions were made by all stakeholders, highlighting the importance of a participatory approach to the management of Maziwe Island.



**Plate 7: Discussion groups at Maziwe Island stakeholder meeting**

Despite stakeholder commitments to the conservation and protection of Maziwe Island and the purchase of a new boat by MPRU for patrols, illegal fishing persists within the Reserve.

## **3.6 Training**

### **3.6.1 Marine Conservation Seminar**

In March, Sea Sense held a two day training seminar in Pangani Town for newly elected Conservation Officers in Tanga Region. A marine conservation seminar was identified as a practical way to bring the newly elected COs together to achieve the following objectives:

- provide participants with an opportunity to share ideas, exchange information and discuss common issues relating to the marine environment
- train participants in practical field conservation techniques
- raise awareness about the conservation of, and threats to, the marine environment

- increase knowledge and understanding of Tanzanian fisheries laws

The seminar was attended by 25 people. These included: nine newly elected Conservation Officers from eight coastal villages in Tanga, Pangani and Muheza Districts; five existing Conservation Officers from Mafia, Temeke and Rufiji Districts; members from local fishing associations; Pangani District staff; a local journalist; and a PhD student who is currently conducting marine research on Maziwe Island, Pangani District.



The seminar consisted of presentations on the aims and objectives of Sea Sense, endangered marine species, threats to endangered marine species, turtle biology, turtle ecotourism and Tanzanian Fisheries Law. Participants were encouraged to take notes and each presentation was followed by a question and answer session.

**Plate 8: Presentation by Sea Sense staff**

To stimulate discussion and exchange of ideas, a number of games and group activities were organized. Each activity had a relevant theme including sustainable resource use, community cooperation, and effective communication skills. The games proved to be a fun and effective way of conveying important messages, increasing the level of communication between participants and improving the level of understanding and awareness.



**Plate 9: A game of 'Chinese whispers' to demonstrate the importance of effective communication**



**Plate 10: Workshop discussion on endangered marine species**

On day two of the seminar all Sea Sense staff and seminar participants travelled to Maziwe Island, a small sandbar 15km off the coast of Pangani Town. The purpose of the trip was to provide practical training in field conservation techniques. Training was provided by existing Sea Sense Conservation Officers and Sea Sense staff. Participants were trained in the following:

- How to identify nesting turtle species by tracks
- How to locate and identify a turtle nest
- Safe translocation of turtle nests
- Monitoring of turtle nest development



**Plate 11: Training in turtle nest translocation**

At the end of the seminar, participants were given the opportunity to provide feedback, stating which activities they found most useful and making suggestions on how the seminar could be improved. The feedback was extremely positive, demonstrating that the seminar was an effective way of increasing understanding and awareness of the importance of marine conservation programmes.

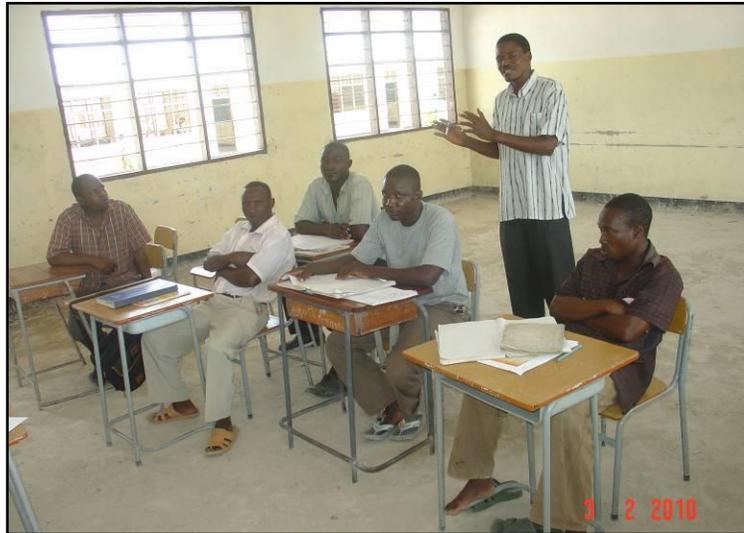
### **3.6.2 Friends of Maziwe**

In September 09, 17 members of Friend of Maziwe in Ushongo attended a theoretical training session conducted by Sea Sense staff. The training covered turtle nest identification and nest translocation techniques. The need for further practical training was identified following the unsuccessful hatching of three nests, most likely due to poor translocation techniques.

Practical training was completed on Maziwe Island, Pangani District during the same field visit.

### 3.6.3 English Lessons

In August, Sea Sense was awarded funds from the Dar es Salaam Charity Goat Races. The funds have been used to provide English lessons to eight Conservation Officers in Temeke District who are involved in turtle ecotourism. The aim is to improve their language skills in order that they are able to communicate more effectively with tourists during nest hatching events and provide information on Sea Sense and turtle conservation.



**Plate 12: Conservation Officers participating in English lessons**

### 3.6.4 UDSM Students

Between August and October, four students from the University of Dar es Salaam completed an eight week placement with Sea Sense. The students undertook several administrative tasks in the Sea Sense office including organising and cataloguing the Sea Sense library, analysing survey data and translating reports.

The students also undertook a number of field activities including a survey of the trade in turtle products in Dar es Salaam, a survey of turtle nesting activity during a neap tide on Maziwe Island, Pangani District and data collection from Conservation Officers in Temeke District.

## 3.7 Education and Awareness

### 3.7.1 DVD Presentations

In December, Sea Sense staff visited several villages in Tanga, Pangani and Muheza Districts to conduct awareness raising activities. DVD presentations about the work of Sea Sense and WWF marine conservation activities in Kenya were shown in six villages as shown in Table 5.

Date	Village	District	Approximate attendance
10/12/2009	Mwarongo	Tanga	200
12/12/2009	Kigombe	Muheza	400
13/12/2009	Choba	Pangani	160
14/12/2009	Ushongo mabaoni	Pangani	200
15/12/2009	Ushongo mtoni	Pangani	150
17/12/2009	Sange	Pangani	190

**Table 5: Villages targeted for DVD awareness shows.**

DVD presentations proved to be a successful way of disseminating information to large groups of people. Several hundred people attended each showing and the films stimulated much discussion amongst viewers.



**Plate 13: Villagers in Ushongo watching the Sea Sense DVD**

### 3.7.2 Celebrating World Environment Day

In early June 2009, Sea Sense conducted ‘Village Olympics’ as part of World Environment Day celebrations in four villages in Rufiji District: Jaja, Mbwera, Kiecheru and Pombwe. The objective of the competition, which specifically targeted fishers, was to raise awareness of endangered marine species and sustainable resource use.

Sea Sense visited each of the villages in May to introduce the competition and elicit support from village councils. Posters advertising the competition were placed around each village and local fishers were encouraged to sign up for the activities.

Village Olympics were held at the beginning of June in each village. In most villages the level of attendance was good with over 200 participation and spectators. In Pombwe, attendance

was poor initially, but a music system was used to attract people to the competition. A variety of races and games took place including sack races, tug of war matches and sustainability games. Winners of each race were awarded prizes including t-shirts, caps, torches and radios.



**Plate 14: Jaja Village Olympics, Rufiji District, June 09**

A final World Environment Day ceremony was held in Jaja village in Rufiji District. Participants in the Village Olympics were invited to attend. The Guest of Honour gave a welcome speech and presented prizes to the overall winners of the Village Olympics including mobile phones and stereos. The ceremony was attended by over 400 villagers, village and ward councillors and District staff.



**Plate 15: Competition winners celebrating World Environment Day**

### 3.7.3 Media and Magazine Releases

A press release regarding the drowning of a dugong mother and calf in Rufiji District was submitted to several newspapers in February 09 and was published in The Express.

In March, the Sea Sense Education Officer participated in a radio interview on Uhuru radio station to raise awareness of marine conservation and the work of Sea Sense, focusing on marine endangered species, particularly dugongs and the recent drownings in Rufiji Districts.

In August, the Sea Sense Education Officer took part in further radio interviews on East Africa Radio and Radio Mwambao FM to raise awareness of endangered marine species and promote the work of Sea Sense. In December, Sea Sense was invited to participate in a television discussion on TBC1 about the effects of climate change on endangered species.

In December, an article written by Sea Sense was published in 'Tantravel', a magazine produced by Tanzania Tourist Board. The article entitled 'Getting Communities Involved in Conserving Marine Life', described Sea Sense community based turtle conservation activities with a particular focus on ecotourism in Temeke District.

### 3.7.4 School Presentations

Presentations on turtle conservation were given to four classes at the Elementary International School of Tanganyika (IST) in Dar es Salaam. Following the presentations, all four classes adopted a turtle nest.

In November, the Sea Sense Education Officer gave a presentation on turtle biology and conservation to the IST 'Wanyama Club'. The students were taught how to identify different turtle species using a real turtle carapace and took part in a turtle quiz. Sea Sense has been invited to give further presentations on dugongs and whale sharks.



Plate 16: Sea Sense Education Officer and IST Wanyama Club

In December 2009, the Sea Sense Coordinator was invited to give a presentation on Sea Sense activities to the Roots and Shoots Club at IST Secondary School. Information leaflets were distributed and a question and answer session held.

### 3.7.5 Dar es Salaam Charity Goat Races



In August, Sea Sense was invited to attend the Dar es Salaam Charity Goat Races to promote marine conservation in Tanzania. Sea Sense staff distributed a selection of awareness and education materials produced by Sea Sense and encouraged visitors to the stand to adopt a turtle nest.

Hundreds of people visited the stand and it proved to be a great way of raising awareness of Sea Sense endangered species conservation activities. Sea Sense has been invited to attend again in 2010.

Plate 17: Sea Sense stand at the Charity Goat Races

### 3.7.6 Information Panels

Seven signboards have been erected at prominent locations in four villages in Rufiji District: Pombwe, Kiecheru, Jaja and Mbwera. The signs provide information on Tanzanian Fisheries Regulations and endangered marine species (Plate 18). The signs were erected in collaboration with village councils and BMU leaders and are designed to increase awareness of the importance of protecting the marine environment.



Plate 18: Signboard erected in Rufiji District, July 09

### 3.7.7 Ecotourism Leaflets and Posters

Posters and leaflets promoting turtle ecotourism have been produced. They are being distributed as widely as possible to encourage both residents and visitors to Tanzania to participate in turtle ecotourism and help generate a sustainable source of funding for turtle conservation.

### 3.8 Dynamite Fishing

Although illegal and highly dangerous, dynamite fishing continues to be practiced along most of the Tanzanian coast including Tanga, Pangani, Bagamoyo, Dar es Salaam, Rufiji and Kilwa. In Temeke District alone, 1,895 blasts were recorded by Conservation Officers in 2009. Dar es Salaam is thought to be the main source of dynamite and the main market for dynamited fish.

Figure 3 shows Sea Sense data on the number and distribution of dynamite blasts in Temeke District in 2009.

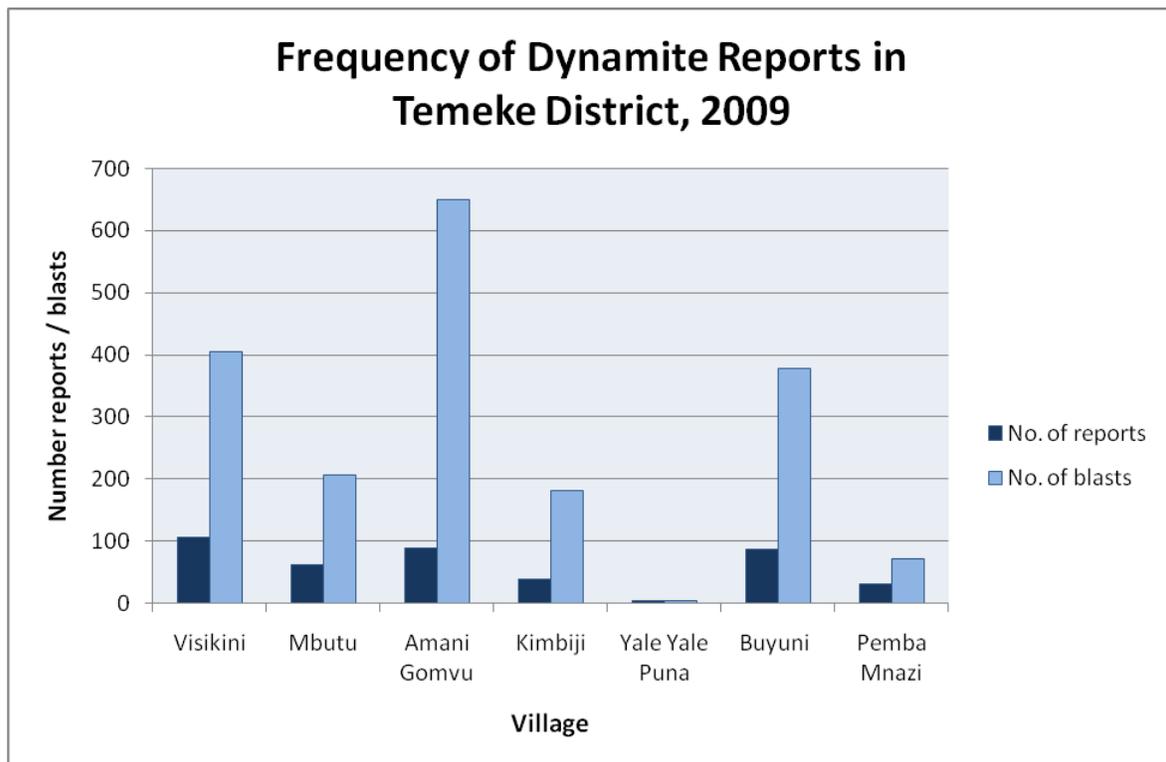


Figure 3: Frequency of Dynamite Fishing Reports in Temeke District, 2009

Sea Sense data on dynamite fishing has contributed to the production of a map showing the intensity of dynamite fishing in Tanzania. The map has been produced by the Reefs at Risk initiative of the World Resources Institute, Washington, based on monitoring data provided by a variety of stakeholders. The map will be used to raise awareness of the extent of the problem in Tanzania and lobby the relevant authorities for action.

Whilst most Sea Sense Conservation Officers continue to record dynamite fishing at many locations along the coast, a number of COs have ceased to record blasts due to increasing frustration at the lack of government action to curb dynamite fishing. They also report an increasing lack of willingness amongst other community members to cooperate with reporting networks due to the lack of action.

In March the Tanzania Fisheries Division, called a meeting with key stakeholders to assist with the development of an anti-dynamite strategy. Sea Sense attended the meeting together with three Conservation Officers who regularly observe and record incidences of dynamite fishing. A number of agreed actions have since been implemented but dynamite fishing persists along much of the Tanzanian coast.

In June Sea Sense conducted an interview with a dynamite fisher who had lost both hands in a dynamite fishing accident near to Yale Yale Puna village in Temeke District. The fisher agreed to talk to a journalist about dynamite fishing and the impact the accident has had on him and his family. A two page article was published in The Guardian in December.



Plate 19: Dynamite Fishing victim and his family, Temeke District

### 3.9 Scientific Symposia and Workshops

#### 3.9.1 International Sea Turtle Symposium

In February Sea Sense presented research findings at the 29<sup>th</sup> International Sea Turtle Symposium in Australia. An oral presentation was given on the results of a Sea Sense survey in 2008 to determine incidences of human fatality and illness from turtle meat consumption.

A poster presentation was given detailing the results of a survey of marine turtle bycatch in the industrial prawn trawl fishery in Tanzania, conducted in 2007 in collaboration with Tanzania Fisheries Research Institute (TAFIRI).

### **3.9.2 Dugong Workshop**

A dugong workshop was convened in Maputo, Mozambique by Mozambique's National Directorate of Conservation Areas in the Ministry of Tourism. Latest estimates indicate that the Bazaruto Archipelago area in Mozambique supports some 250 dugongs which is perhaps the last remaining viable population in the Western Indian Ocean. The dugongs are under threat from a combination of factors including incidental capture in gill nets, uncontrolled coastal development, local fishing practices, loss of habitat and hydrocarbon exploration.

The objective of the workshop was to bring national and international experts together to develop recommendations for the conservation and management of dugongs in and around Bazaruto Archipelago National Park, Mozambique. Sea Sense was invited to attend the workshop in view of the significant contribution Sea Sense has made to the understanding of the status, threats and attitudes to dugongs in Tanzania.

Plenary sessions were held on research and monitoring; law enforcement for dugong conservation; education and drafting of content for the Dugong Management Plan (DMP). After the plenary, delegates split up into working groups to address various components of the Management Plan. A draft set of Priority Actions were subsequently refined for inclusion in the DMP.

Specific advice on dugong conservation in Tanzania was sought from Dr Helene Marsh who is widely considered to be the world expert in dugong biology and conservation. Dr Marsh offered advice on Sea Sense efforts to assess dugong population size and distribution in Tanzania and recommended the targeting of resources towards the reduction of threats from gillnet fisheries due to the current rate of incidental capture in gillnets. In addition, Dr Marsh provided Sea Sense with a dugong DNA testing kit and invited Sea Sense to submit genetic samples taken from captured individuals, to laboratories at James Cook University, Australia. Dugong samples from Mozambique are also being analysed there so it will allow genetic comparisons to be made between the populations in each country. This piece of research is particularly relevant due to the likelihood of dugongs in Mozambique migrating northwards into Tanzanian waters and highlights the importance of regional cooperation in dugong conservation and management.

### **3.9.3 WIOMSA**

In August Sea Sense presented three posters at the 6<sup>th</sup> Western Indian Ocean Marine Science Association symposium in La Reunion. Posters detailing Sea Sense work on turtle ecotourism and whale shark awareness in Mafia District and dugong conservation activities in Rufiji District were presented.

### **3.10 Funding**

#### **3.10.1 RECOMAP**

In November 09, Sea Sense was awarded further funding from the EU under the RECOMAP programme. Funds are being used to develop turtle ecotourism in Mafia and Temeke Districts and promote waste management to reduce the harmful effects of plastic and other debris on endangered marine species.

Project implementation commenced in early December. Meetings were held with village councils to introduce and elicit support for key project objectives. Recruitment of turtle 'Tour Guides' will take place in early 2010 together with awareness activities to encourage solid waste management and recycling.

#### **3.10.2 US Agency for International Development (USAID)**

Tanzania Coastal Management Partnership (TCMP) submitted a proposal to USAID for funds to implement an ecosystem-based management initiative targeting an area covering Saadani National Park, north to Pangani Town and east to Zanzibar. The objective of the proposal is to reverse the trend of environmental destruction of critical coastal habitats and improve the well being of coastal residents. The proposal incorporates endangered species protection work and funds have been allocated to Sea Sense to carry out that work in Pangani and Saadani National Park.

#### **3.10.3 Local Fundraising**

Three events were held in Dar es Salaam to raise money for Sea Sense and increase awareness of marine conservation in Tanzania. A quiz, an aerobathon and a sponsored swim helped to raise over TSh 6 million.

## **4. Problems Encountered**

### **4.1 Continuation of Illegal Activities**

Despite clear evidence and information provided by Sea Sense to national, district and village personnel, illegal activities including turtle slaughter, dynamite fishing, live coral mining and mangrove cutting continue.

The remains of slaughtered turtles are regularly found by COs in Rufiji and Kilwa Districts and turtle consumption is reported to be common in Kilwa Masoko. Four fishers were arrested in July in Kilwa Kivinje for possessing over 50kg of turtle meat and attempting to sell it. The case went to court and the Sea Sense CO was called as a witness. All four fishers were found guilty. Three were sent to jail for four months and the fourth paid a fine of Tsh 200,000. Fishers from Pombwe in Rufiji District are known to travel frequently to Somanga in Kilwa to sell turtles they have caught in gillnets.

Illegal turtle slaughter also appears to be becoming more frequent in Mafia District. The Mafia Field Officer has reported turtle meat for sale in Kilindoni where there is a high influx of migrant fishers. The meat is sold in secret at night. Four fishers were found with turtle meat in Kifinge village and were fined accordingly. The meat was destroyed. Turtle meat is also reported to be sold openly in Tumbuju village.

Dugong meat is also known to be sold and consumed illegally following incidental captures in gill nets. Despite awareness campaigns about the importance of dugong conservation and small incentives offered to retrieve dugong specimens, local fishers are often unwilling to cooperate due to the high price dugong meat can bring.

A coral reef mine was identified in April in Kilwa Kivinje and brought to the attention of the District Fisheries Officer. The name of the offender has been reported to District Authorities for action.



**Plate 20: Evidence of coral mining, Kilwa District**

Unauthorized mangrove harvesting is a problem, mainly in Somanga and Mpara, Kilwa District.

#### **4.2 Limited Enforcement & Awareness**

Despite clear conservation measures in Tanzanian legislation to protect endangered marine species, there is little or no enforcement by relevant government authorities to penalise offenders who deliberately hunt or poach turtle eggs, or who use destructive and illegal fishing gears such as dynamite. Limited awareness of the laws and the importance of sustainable resource use is also often lacking.

### **5. Aims for 2010**

- Continue conservation, endangered species protection and awareness raising in six coastal districts in Tanzania
- Expand turtle ecotourism in Temeke and Mafia Districts
- Conduct a fisheries bycatch survey in Pangani District
- Organise a World Environment Day celebration in Pangani District
- Conduct ground and interview surveys in Pangani District to assess potential for turtle ecotourism development
- Promote Sea Sense turtle adoption programme
- Secure funds for dugong conservation in Tanzania

- Attend 2010 Symposium on Sea Turtle Biology and Conservation in India
- Contribute to the conservation and protection of Maziwe Island Marine Reserve
- Conduct corporate fundraising campaign
- Conduct education and awareness campaign targeting schools in Dar es Salaam
- Conduct media campaign to promote the work of Sea Sense
- Improve Sea Sense data management and administration procedures

## **6. Immediate & Long Term Benefits**

The immediate benefits from Sea Sense activities are:

- Protection of nesting turtles and their eggs from both human and non-human predators. Without Sea Sense's community-based intervention, many nesting turtles would have been slaughtered and their nests poached.
- Protection of other marine species and habitats through raised awareness and communication.
- Improved skills of local communities (Conservation Officers / hotel staff), government personnel and scientists (University students) through training and field work in marine conservation and sustainable resource use.
- Improved local livelihoods through employment of community members (Conservation Officers).
- Improved knowledge of the status, distribution and threats to marine species and habitats in Tanzania

Long-term benefits include:

- Development of eco-tourism and generation of revenue through turtle adoptions and other income generating opportunities.
- Improved understanding about marine conservation and sustainable resource use leading to wise use of resources in the future.
- Improved population status of endangered marine turtles and other marine species in Tanzania.

## **7. Acknowledgements**

Sea Sense would like to thank all their donors, particularly Born Free, WWF and the EU RECOMAP programme for their continued funding and support. We would also like to acknowledge Amani Beach Hotel, Ras Kutani Lodge, Kasa Beach Hideaway, Chole Mjini, Mkoma Bay Tented Lodge and Kasa Divers for raising money for Sea Sense and encouraging their guests to make donations. Thanks also to Dar es Salaam Charity Goat Races for giving Conservation Officers in Temeke District the opportunity to learn English. Finally, our thanks to all our Conservation Officers, as well as the Village Chairpersons, Council members and Environment Committees for helping to protect endangered marine life in Tanzania.

### Appendix I: Results of Activities Performed by Sea Sense in 2009

Activities	Results / Achievements	Remarks
1. Flagship species data collection	<ul style="list-style-type: none"> <li>• Number of turtle nests recorded: 330</li> <li>• One turtle tagged in Temeke and three in Mafia</li> <li>• One tag recovered</li> <li>• Number of live dugong sightings: 6</li> <li>• Many humpback whales sighted off the Tanzanian coast between July and December</li> </ul>	<ul style="list-style-type: none"> <li>• 328 nests were laid by green turtles (<i>Chelonia mydas</i>), peaking in March and April and two by hawksbill (<i>Eretmochelys imbricata</i>) turtles.</li> <li>• Tag found in Tanga District. Turtle originally tagged in Kenya.</li> <li>• Dugong sightings in Mafia and Rufiji Districts</li> </ul>
2. Turtle nest monitoring and protection	<ul style="list-style-type: none"> <li>• Number of nests hatched successfully: 247</li> <li>• Number of hatchlings: 22,510 (success rate: 74.84%)</li> <li>• Number of nests predated / partially predated: 31</li> <li>• Number of nests poached: 10</li> <li>• Number of nests inundated: 13</li> <li>• Number of nests rotted: 4</li> <li>• Turtle ecotourism developed in Mafia, Temeke &amp; Pangani Districts</li> <li>• Village Community Fund in Amani Gomvu village (Temeke) and Juani village (Mafia) receiving funds from turtle ecotourism</li> </ul>	<p>The predated nests were eaten by red ants, monitor lizards, honey badgers and mongooses. Efforts were made to protect nests from predation through translocation and netting.</p>
3. Mortality analysis for flagship species	<ul style="list-style-type: none"> <li>• Number of turtle mortalities recorded: 221</li> <li>• Of these, 164 were green turtles and 45 were hawksbill, three were leatherback, seven were olive ridley and two were</li> </ul>	<ul style="list-style-type: none"> <li>• Average CCL of 60.7cm</li> <li>• Average CCW of 53.8cm</li> <li>• 55% of mortalities were female</li> <li>• 30% of mortalities were male</li> </ul>

	<p>loggerhead.</p> <ul style="list-style-type: none"> <li>• Number of dead dugongs reported: 3</li> <li>• Number of dead cetaceans recorded: 4</li> </ul>	<ul style="list-style-type: none"> <li>• 15% of mortalities sex unknown</li> </ul>
4. Surveys	<ul style="list-style-type: none"> <li>• Baseline surveys of potential turtle nesting beaches in Tanga, Pangani &amp; Muheza Districts</li> <li>• Survey of nesting activity on Maziwe Island, Pangani District during neap tide period</li> <li>• Survey of trade in turtle products conducted in DSM area</li> </ul>	<p>Surveys revealed</p> <ul style="list-style-type: none"> <li>- Most beaches in Tanga District unsuitable for turtle nesting</li> <li>- Beaches in Pangani and Muheza Districts have high potential for turtle nesting</li> <li>- One nest translocated from Maziwe Island and three nesting attempts observed during the survey</li> <li>- active turtle meat, oil and carapace trade in DSM area</li> </ul>
5. Recruitment & training of Conservation Officers and District personnel / others	<ul style="list-style-type: none"> <li>• Nine new Conservation Officers recruited and trained in Tanga, Pangani &amp; Muheza Districts</li> <li>• Activities of 14 Conservation Officers in Rufiji and Kilwa Districts suspended due to lack of funding</li> <li>• Marine Conservation seminar held in Pangani District</li> <li>• Four students from the University of Dar es Salaam trained in office administration and field research</li> <li>• One District staff, two hoteliers &amp; Friends of Maziwe fisher group trained in Pangani District</li> <li>• Eight Conservation Officers receiving</li> </ul>	<ul style="list-style-type: none"> <li>• Village elections held to recruit new COs.</li> <li>• Training included: ecology of endangered species, threats to endangered species, illegal / unsustainable fishing practices, ecotourism and practical field techniques.</li> </ul>

	English language training in Temeke District	
6. Control of illegal fishing	<ul style="list-style-type: none"> <li>• 1,895 blasts recorded in Temeke District by COs in 2009</li> <li>• Sea Sense data used in production of map showing intensity of dynamite fishing in Tanzania</li> <li>• Interview held with victim of dynamite fishing in Temeke District</li> </ul>	<ul style="list-style-type: none"> <li>• Despite many anti-dynamiting initiatives, the practice persists along much of the Tanzanian coast</li> <li>• Village leaders agree that dynamite fishing is the most threatening fishing practice in Temeke District. Main reason given for the persistence of dynamite fishing is limited or lack of law enforcement. Many villagers complain that fishers caught with dynamite or dynamited fish are released after a few days, contrary to Fisheries laws.</li> </ul>
7. Education and Awareness	<ul style="list-style-type: none"> <li>• Village meetings held in eight coastal Districts</li> <li>• Whale shark awareness meetings held with fishers in held in Mafia District</li> <li>• DVD presentations held in Tanga, Pangani &amp; Muheza Districts</li> <li>• Village Olympics held in Rufiji District</li> <li>• World Environment Day celebrated in Rufiji District</li> <li>• Five radio &amp; TV interviews conducted</li> <li>• Three press releases and magazine articles published</li> <li>• Six school presentations given in Dar es Salaam</li> </ul>	<ul style="list-style-type: none"> <li>• Set of recommendations produced from whale shark awareness meetings</li> <li>• Several hundred people attended each showing of marine conservation DVD's.</li> </ul>

	<ul style="list-style-type: none"><li>• Sea Sense stand at Dar es Salaam Charity Goat Races</li><li>• Seven information panels erected in Rufiji District</li></ul>	
8. Project Development	<ul style="list-style-type: none"><li>• New funding secured to expand turtle ecotourism in Mafia &amp; Tembeke Districts</li><li>• Funding secured to continue marine conservation activities in Pangani District after RECOMAP funding ends in Sept 2010</li></ul>	