



ANNUAL REPORT 2016

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OUR MISSION

To promote conservation of marine wildlife and the health and prosperity of coastal communities in Tanzania through sustainable use of natural resources.



WHY MARINE WILDLIFE?

Sea turtles, dugongs, whale sharks, dolphins and whales are some of the world's most iconic marine wildlife species.

Marine wildlife and their habitats are threatened by human activities in the coastal zone.

Survival of marine wildlife is inextricably linked to the wellbeing of coastal people.

Millions of people depend on nature for their livelihoods and food security.

Biodiversity conservation is critical to sustainable economic development.

Long-term studies to monitor the status and trends of marine wildlife populations can provide measurable indicators of coastal and marine ecosystem health.

Conservation and protection of marine biodiversity keeps ecosystems functional.



SEA SENSE GOALS

Population recovery
and long term protection
for marine wildlife
in Tanzania

Citizens are actively
involved in
maintaining healthy
and productive
marine and coastal
ecosystems



Citizens are actively
involved in
maintaining healthy
and productive
marine and coastal
ecosystems

Coastal livelihoods
provide conservation
benefits for marine
wildlife and promote
the prosperity of local
people





WHERE WE WORK

Sea Sense prioritizes actions in areas of high marine biodiversity and where human pressures on marine resources are greatest.

MAFIA DISTRICT Tanzania's marine biodiversity hotspot and a site of regional importance to marine turtles. Over 50 genera of corals, more than 460 species of fish, the largest green turtle nesting site in Tanzania and a resident whale shark population.

RUFUJI DELTA supports a diversity of estuarine, coastal and marine wetland habitats including the most extensive estuarine mangrove forest on the eastern seaboard of Africa. Home to the last known population of dugongs in Tanzania.

KIGAMBONI DISTRICT Tanzania's second largest green turtle nesting site. Heavy fishing pressure due to its proximity to Dar es Salaam, Tanzania's commercial capital.

KILWA DISTRICT abundant fisheries resources that are in rapid decline due to the use of illegal fishing gears. A major hub for illegal trade in mangrove and other forestry products.

LINDI DISTRICT Remote and under developed but high levels of illegal fishing including blast fishing and a targeted green turtle fishery using specially adapted nets known as 'likembe'.

PANGANI DISTRICT An important green turtle nesting site and rich and diverse coral reefs that are home to foraging hawksbill turtles.

MKURANGA DISTRICT Sporadic green turtle nesting activity but large populations of migrant fishers on offshore islands.



2016 IN NUMBERS

335 sea turtle mortalities recorded by Sea Sense Conservation Officers

400 green turtle nests recorded by Sea Sense Conservation Officers

0 egg poaching events at Sea Sense monitored sites

31 flipper tags applied to nesting turtles



24 nests inundated by the high tide

0 hawksbill turtle nests recorded by Sea Sense Conservation Officers

24 nests predated by wild animals

\$4,300 raised through sea turtle ecotourism

0 live dugong sightings recorded
0 dugong mortalities recorded

1,050 village leaders sensitised on good governance and leadership ethics



1,860 school pupils educated in marine wildlife conservation and ocean pollution

8,200 coastal people reached through Sea Sense education and capacity development programmes



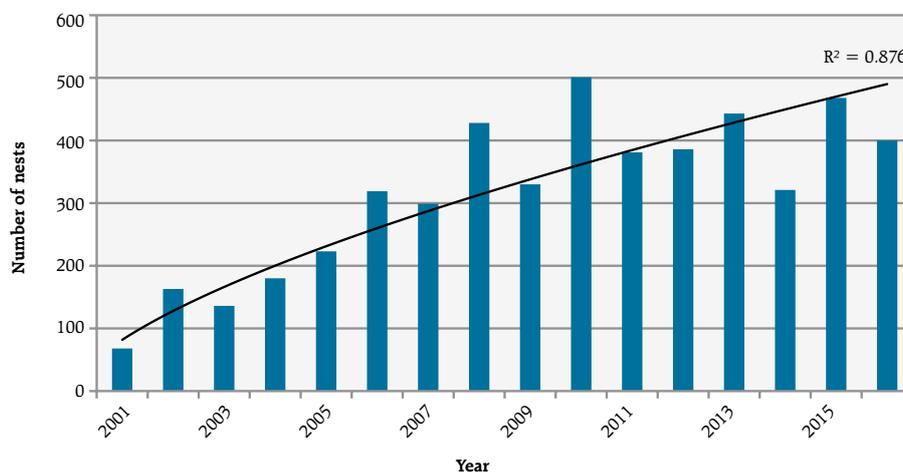
MARINE TURTLE RESEARCH AND CONSERVATION

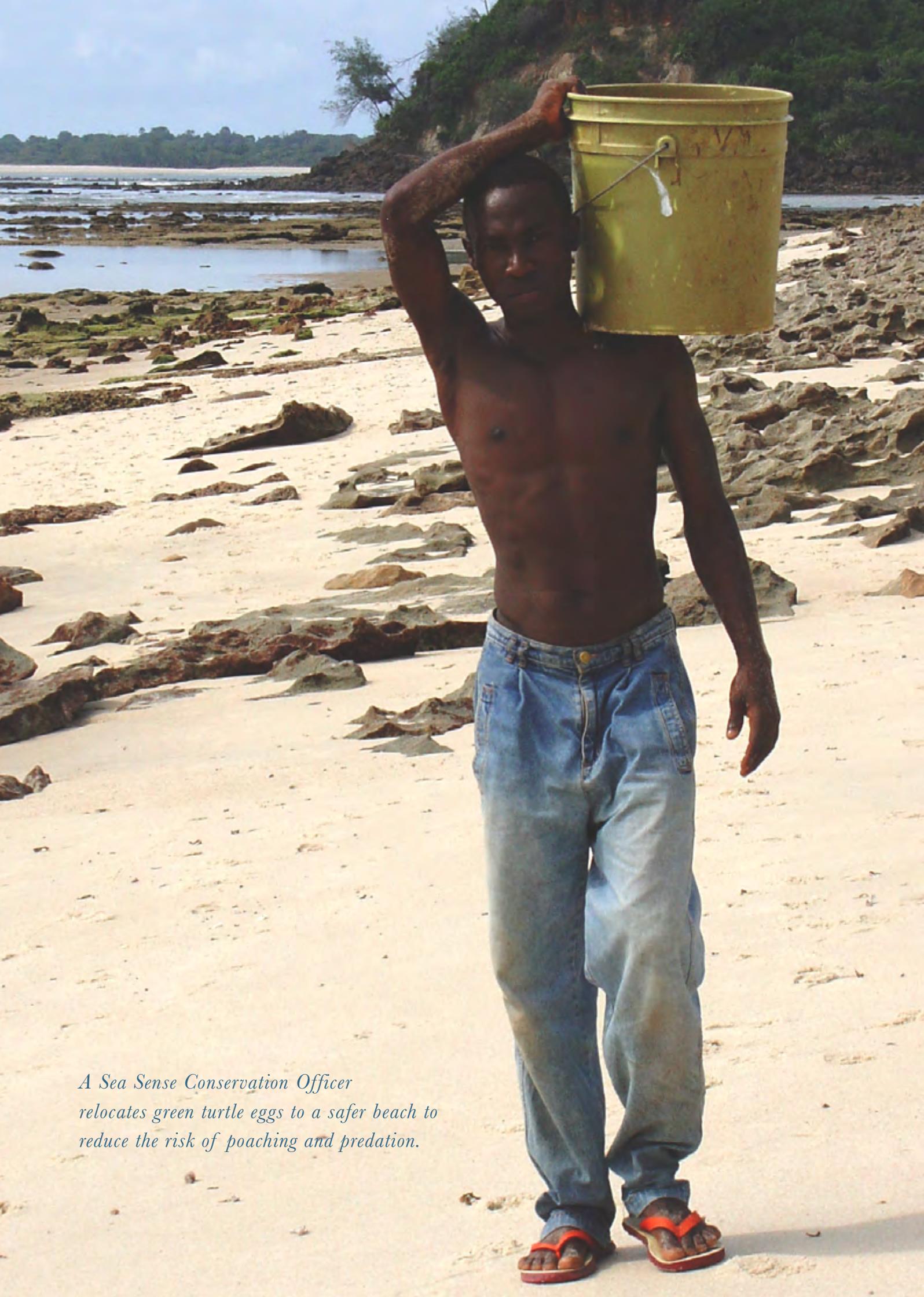
2016 was a bumper year for sea turtle nesting in Mafia Island, Tanzania's largest nesting site. Nasorro, the Sea Sense Conservation Officer recorded 225 nests which broke the 2015 record of 196. This means that Nasorro ended 2016 with a total of 1,993 nests since he began monitoring nests in 2001....seven nests shy of the 2,000 milestone. Nasorro was a little disappointed to miss the milestone this year but it means that he will start 2017 with an ever more determined focus.

Nesting sites at other locations in Tanzania were not quite as productive as Mafia but overall, 2016 can be considered a good nesting year with a total of 400 nests recorded. The graph below shows the results of the Sea Sense nest monitoring programme over the past 16 years.

April and May saw peak nesting activity and the move from daily patrols to nightly patrols at nesting beaches in Mafia and Temeke Districts. The annual programme of flipper tagging was in its fifth consecutive year which meant that there were several repeat encounters from previous tagging seasons including females in Mafia that were first tagged in 2006 and 2007 before intensive tagging began. Analyses of tagging data have revealed some 'text book' re-migratory behaviour from several turtles. On average, green turtles nest every three years and the turtles in Mafia are no exception.

During their daily patrols, Conservation Officers recorded 335 stranded sea turtles. 322 of the stranded individuals were green turtles, six were hawksbills, three were olive ridleys, two were loggerheads and two were leatherbacks. Some showed evidence of entanglement in fishing nets while others had been hunted for their meat.





*A Sea Sense Conservation Officer
relocates green turtle eggs to a safer beach to
reduce the risk of poaching and predation.*

LINDI DISTRICT

There is a well established green turtle fishery in Lindi District whereby specially designed nets known as 'likembe' are set in coastal waters to capture green turtles for trade and consumption. The fishery has never been studied and hence the scale and impact of the fishery remains unknown.



In 2016, Sea Sense undertook an investigation of the fishery to identify operational details including the number of likembe in use, the extent of trade in turtle products and the economic contribution to communities involved in the trade. Data were collected through interview surveys with local citizens in 11 villages.

Data will be used to guide the design and implementation of strategies to reduce the use of likembe including increased awareness efforts, capacity building for community fisheries managers, governance training for village leaders and advocacy at district level for improved enforcement efforts.



GREEN TURTLE FISHERY IN LINDI DISTRICT

178 respondents.

67% of respondents were fishers, 19% were farmers and 14% were involved in small businesses (food vendors, tailors, carpenters).

44% of respondents stated that a turtle fishery was active in their village. A third of those respondents cited 'likembe' nets as the most common gear to catch turtles.

71% of respondents stated that turtle meat was consumed frequently in their village.

57% of respondents stated that trade in turtle meat was conducted openly in their village.

79% of respondents knew that turtles were protected and trade was illegal.

1kg of turtle meat commonly sold for \$1.

67% of respondents knew someone that had died from eating turtle meat.



COUNTING DUGONGS

Effective species conservation measures rely on knowledge of population sizes. Therefore, efforts to assess the status of the regional dugong population are critical for the future survival of the species in east Africa.

Although Sea Sense has been working with communities to conserve dugongs and their habitats for the past 15 years, there is still a paucity of data on the actual number of dugongs that survive in Tanzania. While herds of more than 100 individuals were once commonplace along the length of the coast, sadly, their numbers have declined dramatically. The last live dugong sighting was in the Rufiji Delta in January 2016. Since 2004, Sea Sense has recorded 15 dugong mortalities as a result of gill net entanglement.

In November 2016, Sea Sense conducted a dugong aerial survey in the Rufiji Delta- Mafia Island Seascape (right). The survey forms part of a western Indian Ocean regional dugong status assessment. While it was extremely disappointing for the survey team to report zero dugong sightings, this might not necessarily mean that dugongs are extinct in Tanzania. It could simply mean that they were not observed on the survey day. Hence Sea Sense will be repeating the survey several times in 2017.



*Conservation Officers recorded
7 dolphin mortalities and
3 whale strandings including
this huge sperm whale in Kilwa.*



EDUCATION AND CAPACITY DEVELOPMENT

Sea Sense education and capacity development programmes provide opportunities for local people to build knowledge and skills to address resource conservation challenges and hold leaders and decision makers to account on matters related to biodiversity conservation.



2016 HIGHLIGHTS



4,000 coastal people reached through community theatre.

3,000 coastal people participated in community events to celebrate World Environment Day, World Sea Turtle Day, International Coastal Clean-up Day and World Fisheries Day.

280 gillnet fishers sensitized on the impacts of sea turtle bycatch.

480 fisheries stakeholders sensitized on dugong conservation.

1,860 school pupils educated on sea turtle and dugong conservation and ocean pollution.

360 fishers and fish traders sensitised on sustainable fisheries.

60 female fish traders sensitised on laws prohibiting trade in turtle meat and oil.

68 community leaders trained in waste management.

32 community fisheries managers trained in marine ecosystem, fisheries economics and good governance.



SUSTAINABLE LIVELIHOODS

Strengthening community based fisheries management

In January 2016, Sea Sense led a six day study tour to Lake Victoria for 22 coastal fisheries stakeholders to expose them to new ideas and strategies for community based fisheries management through a peer to peer learning experience. The importance of strong working relationships between community fisheries managers (Beach Management Units) and village councils was one of the key lessons learned. The participants recognized that good relationships and team working between Beach Management Units and village councils was central to the success of the Beach Management Units and good communications created trust between them.



“At Lake Victoria I was so surprised to see a village chairperson talk about the BMU as if he was a BMU chairperson himself. He was able to do this because he was very close with BMU leaders and so he understood all BMU roles and responsibilities”.

Beach Management Unit member from Stahabu, Pangani District.



GOVERNANCE

AND LEADERSHIP *Governance can be defined as the manner in which stakeholders participate effectively in policy setting and decision making that is based on the rule of law, transparency, accountability and equity*

Good governance and strong leadership are essential for the conservation and protection of marine biodiversity. Good governance ensures that the benefits of biodiversity conservation are shared and contribute to sustainable economic development.

Sea Sense invests considerable effort in sensitising community leaders on the characteristics of good governance to ensure that they are able to carry out their roles and responsibilities as leaders and decision makers. In 2016, Sea Sense held sensitisation meetings with 55 village councils, reaching more than 1,050 village and ward councillors across seven districts. In most communities, village councils are supportive of Sea Sense marine conservation projects but they do not regard environmental stewardship as a component of their own role. Many leaders do not understand their roles and responsibilities in biodiversity governance but instead focus on personal interests such as protecting their votes and seats. Hence, meetings with Sea Sense are an important opportunity to share information about marine wildlife issues but also sensitize leaders on the concepts of good governance and strong leadership.



“Please support us with more education. Our people need to understand the implications of using illegal fishing gears especially dynamite and poisons which are common in our area”.

Masasi ya Leo chairperson, Lindi District



INFORMATION EXCHANGE

In 2016 Sea Sense:

- Chaired a meeting of regional dugong experts in South Africa
- Presented work at the Africa Blue Solutions Forum in Zanzibar
- Participated in a 'Research for Impact' training course in Kenya
- Attended the 'Our Oceans' conference in Washington DC, USA
- Lectured University of Dar es Salaam students on endangered marine species biology and conservation
- Worked with a film crew from Belgium to produce a short news piece on marine turtle conservation in Mafia Island
- Attended an 'ICT for Fisheries' training course in South Africa
- Participated in a meeting to explore spatial planning tools for coastal management in Tanzania
- Contributed to a short film by National Geographic about blast fishing in Tanzania

<http://news.nationalgeographic.com/2016/06/blast-fishing-dynamite-fishing-tanzania/>





A fisher in Lindi shows off his catch

A NEW COLLABORATION



In 2016 Sea Sense began a two year research collaboration with Louisiana State University, University of Rhode Island and the University of Dar es Salaam on a project entitled "Poverty traps and mangrove ecosystem services in coastal Tanzania." More than 35% of mangrove areas worldwide have been degraded or lost entirely in the past 20 years. This degradation has significant consequences for human wellbeing because mangroves provide a number of ecosystem services that are particularly beneficial to coastal communities.

The project is funded by the U.S. National Science Foundation and brings together an interdisciplinary, international research team with expertise in economics, ecology, hydrology, climatology and system modelling.

In August 2016, data collection commenced at 14 survey sites in Pangani and Rufiji Districts. A social science team interviewed 140 households, a fisheries team collected fish samples for stable isotope analysis, a forestry team sampled mangrove forests to estimate carbon stocks above and below ground and a hydrology team tested more than 70 wells to assess levels of salt water intrusion.



The overall goal of the study is to examine the complex coupled system of mangrove ecosystem services and poverty traps.

How do different mangrove ecotypes and geomorphic settings affect mangrove biomass and carbon stocks in coastal Tanzania?

How do differences in mangrove forest function and structure determine the availability and magnitude of their ecosystem services?

How does climate variability affect mangrove ecosystem services?

How do mangrove ecosystem services reduce the risk of people falling into poverty traps?

How do changes in wealth affect demand for mangrove ecosystem services?

How are mangroves and their ecosystem services managed in Tanzania?



SEA SENSE IN 2017

The inter-relationships between biodiversity and people are what guides Sea Sense's work. Reflecting on past achievements and lessons learned has helped Sea Sense to redefine its focus moving forward and identify where bold actions are needed to address some major challenges facing people and wildlife in Tanzania.

In 2017, Sea Sense will launch an updated Strategic Plan for the period 2017 – 2021 which sets out a more holistic approach to biodiversity conservation and addresses the critical links between population pressures, environmental conservation and sustainable development. Sea Sense recognizes that people with limited resources cannot exercise adequate stewardship over their natural resources unless their basic needs for health and livelihoods are met. Therefore, Sea Sense will move towards a more clearly defined Population-Health-Environment (PHE) approach in order to broaden the reach of the Organisation and enable connections between different themes that affect human and natural systems.

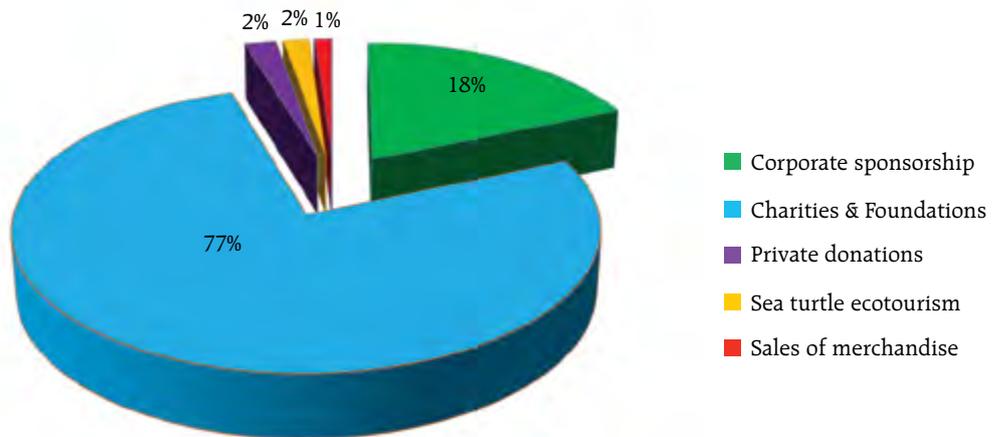
PHE frameworks are particularly relevant in areas of high biodiversity where increasing population pressures and demand for resources threatens the welfare of local communities and the integrity of vital ecosystems. In these circumstances, combining conservation and health messaging provides an excellent entry point for greater community understanding, participation and commitment to conservation objectives, particularly amongst marginalized groups such as women and youth as well as local leaders and decision makers.

Over the next five years, Sea Sense aims to network and form strategic alliances with other organizations that work with women and youth in order to strengthen organizational capacity and to support the implementation of a wider spectrum of development and conservation targets.

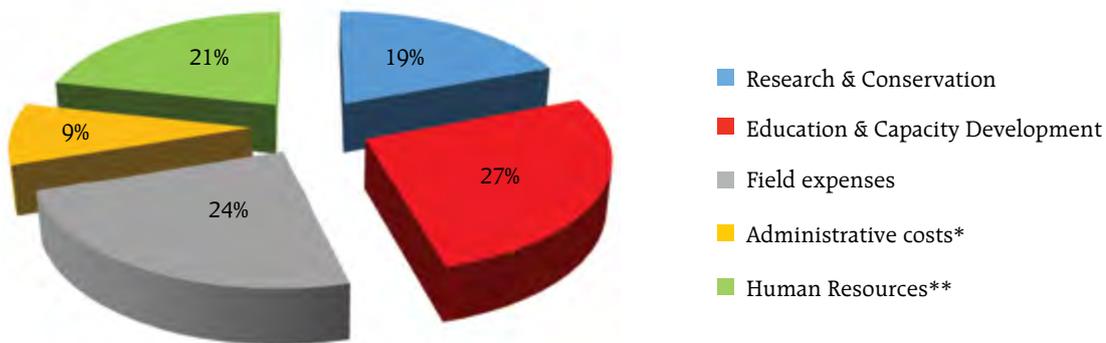


SEA SENSE FINANCES

In 2016, Sea Sense received funds from five main sources: charities and foundations; corporate sponsors; private donations, sea turtle ecotourism and through the sale of Sea Sense merchandise. Income for the year was USD 262,669.



Sea Sense Expenditure



* Includes office rent, insurance, utilities, audit fees, internet and communications, stationery and office supplies and bank charges.

** Includes HQ staff (Director and Finance Officer) and payroll expenses (Skills and Development Levy, staff pension fund contributions and Workers Compensation Fund).





ACKNOWLEDGEMENTS

Sea Sense would like to thank all donors, supporters and friends for their continued support for Sea Sense throughout 2016. Our sincere thanks also go to our Conservation Officers who work tirelessly to conserve marine wildlife in Tanzania. Thanks also to Village Chairpersons, Council Members, Environment Committees, District Authorities and the Government of Tanzania for helping to protect marine wildlife and critical coastal habitats in Tanzania.





Helping coastal communities protect endangered marine life in Tanzania

P.O. BOX 105044, DAR ES SALAAM, TANZANIA

TEL: +255 22 266 7784

EMAIL: INFO@SEASENSE.ORG

WEB: WWW.SEASENSE.ORG