CMS

IOSEA Marine Turtles Memorandum of Understanding - National Report 2024

INSTRUCTIONS FOR COMPLETING THE NATIONAL REPORTING QUETIONNAIRE:

The main purpose of completing the National Reporting Questionnaire (NRQ) is to provide information on your country's implementation of the IOSEA Marine Turtle MOU, including its Conservation and Management Plan (CMP) and the IOSEA Work Programme adopted by the 8th Meeting of Signatory States. Please include activities undertaken by the government, non-governmental organizations, private sector and other relevant stakeholders.

The IOSEA Secretariat will analyze national reports and use the provided information to facilitate marine turtle conservation work using the resources at its disposal, as well as in fundraising efforts. The information will also be used to raise any issues, as mandated by IOSEA Signatories, at relevant political fora, such as CMS, CITES, or Regional Fisheries Management Organizations.

Most importantly, collecting information of relevance to marine turtle conservation in the NRQ can help national decision makers to plan marine turtle conservation activities within countries and sub-regions, and guide national and international project planners and donors.

The NRQ is structured to reflect progress in implementation of the six objectives of the CMP: There are two modalities of the NRQ: it can be accessed via the online reporting system (ORS) or filled out using an MS Word file. However, the Word version should be used only if using the online questionnaire is not possible for technical reasons (e.g. the internet connection is too unreliable).

Please answer all questions as fully and as accurately as possible. Wherever possible, please indicate the source of information used to answer the question, particularly if a published reference or report is available. Comprehensive responses to the questions posed in Section 1.4 should also satisfy many of the reporting requirements of the 2009 FAO Guidelines to Reduce Sea Turtle Mortality in Fishing Operations, thereby avoiding duplication of effort.

When working on the online version of the NRQ, save your information by clicking on the "Save all" button inside each section. An auto-save feature also saves any changed responses every 30 seconds, and whenever you move between sections. If additional information is available (e.g. published reports, maps) please attach it to this questionnaire. If working on an offline MS Word file, please submit the completed NRQ by email to the IOSEA Secretariat (iosea@un.org); with a copy to the Coordinator (heidrun.frisch-nwakanma@un.org), as a Word attachment.

GENERAL INFORMATION

Signatory State:

››› Kenya

List any other agencies, institutions, or NGOs that have provided input:
››› Wildlife Research and Training Institute
Kenya Marine and Fisheries Research Institute
WWF
Bahari Hai
IFAW
Olive Riddley

Memorandum in effect in Signatory State since (dd/mm/yyyy):
››› 1st December 2002

This report was last modified: (dd/mm/yyyy):
››› 10th March 2024

Designated Focal Point (and full contact details):
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MARINE TURTLE SPECIES AND HABITATS

Provide sources of information supporting the responses, include reports (governmental, departamental, university, NGO, etc.) as well as published articles (scientific or online articles); also include appropriate links to these information sources, and attach digital files if necessary.

0.1 Overview of marine turtles and their habitats in the IOSEA MOU Signatory States within the IOSEA region.

Provide sources of information supporting the above responses, include reports (governmental, departamental, university, NGO, etc.) as well as published articles (scientific or online articles); also include appropriate links to these information sources and/or attach documents to this report.

a) Please list marine turtle species and genetic stocks in your country, give a general population estimate and trend for your country and indicate where they occur.

	Geographic area	Type of habitat (nesting, feeding developmental)?	Species, genetic stock	Number of egg clutches per year	Population trend (increase, decrease, stable, unknown)
	Green turtle (Chelonia mydas				
	Hawksbill (Eretmochelys imbricata)				
	Olive ridley (Lepidochelys olivacea)				
	Loggerhead (Caretta caretta)				
	Leatherback (Dermochelys coriacea)				

You have attached the following documents to this answer.

0.1_Overview_of_marine_turtles_and_their_habitats_in_the_IOSEA_MOU_Signatory_States_within_the_IOSEA_region..docx - Sea turtles' distribution in Kenya

b) Do government agencies and/or scientific institutions submit data on the occurrence and population numbers of marine turtles to an international database?

☑ YES

Name of database:

››› Olive Ridley Project submits sea turtle sighting data in-water to SWOT (State of the World's Sea Turtles), and Internet of Turtles.

c) Does your country have index nesting beaches in the IOSEA region?

☑ NO

d) Does your country have an IOSEA Network site?

☑ NO

OBJECTIVE I: REDUCE DIRECT AND INDIRECT CAUSES OF MARINE TURTLE MORTALITY

1.1 BEST PRACTICE APPROACHES TO MINMIZING THREATS

Provide sources of information supporting the above responses, include reports (governmental, departamental, university, NGO, etc.) as well as published articles (scientific or online articles); also include appropriate links to these information sources and/or attach documents to this report.

1.1.1. Are there any best practice protocols relating to the protection of marine turtles and their habitats used in your country that you would like to share with other IOSEA Signatories? Please name the protocols and describe briefly, providing references or links to more detailed reports or online texts.

If more rows are required, please contact the secretarat at iosea@un.org

	Title of best practice protocol or approach	What does this approach/ protocol help to achieve	Has the effectiveness of this approach been evaluated? What was the result?	References and links

You have attached the following documents to this answer.

1.1.1._Are_there_any_best_practice_protocols.docx - Best practice protocols

1.2 REDUCTION OF INCIDENTAL CAPTURE AND MORTALITY

Provide sources of information supporting the above responses, include reports (governmental, departamental, university, NGO, etc.) as well as published articles (scientific or online articles); also include appropriate links to these information sources and/or attach documents to this report.

1.2.1 Indicate, and describe in more detail, the main fisheries occurring in the waters of your country (including territorial waters and the EEZ), as well as any high seas fisheries in which flag vessels of your country participate and interact with marine turtles within the IOSEA region.

For each of the different fisheries listed below, please indicate whether the fishery is present and use the text box below to provide more detailed information. Please include information on what marine turtle species are affected and number of reported interactions, if known.

1) Bottoms trawls (including shrimp trawls)

a) Fishing effort:

☑ PRESENT

b) Methods used by your country to minimise bycatch of marine turtles in this fishery

☑ Safe handling (as per existing protocols e.g., FAO guidelines) of incidentally caught turtles (e.g. resuscitation or release by fishers using equipment such as de-hooking, line cutting tools and scoop nets)
☑ Devices that allow the escape of marine turtles (e.g. turtle excluder devices (TEDs)
☑ Spatial and temporal control of fishing (e.g. seasonal closures of fishing activities)

Details:

››› Kenya's trawl fishery is restricted to Malindi and Ungwana Bays, with a designated 5-nm no-trawl zone offshore (Munga et al, 2012). The bay is shallow with a wide continental shelf and supports a significant part of the artisanal fishery as well as the commercial trawl fishery. It is also an important marine turtle foraging area.[C1]

Between 2011 and 2017, only 3 trawlers have been licensed to operate within the area (KMFRI, 2018), and currently between 59 and 167 turtles are caught in trawlers annually (Fennessy et al, 2015). This is subsequent to TED implementation in 2001 as in the 1990s, 500 -1 000 turtles per annum were caught when trawl effort was high (Wamukoya and Mbendo 1995, reported in Wamukoya and Salm 1997). Prawn trawlers not only pose a direct threat to turtles, but also indirectly through habitat destruction (Wamukota and Okemwa 2008).
Although the trawlers are required by law to have TEDs, trawler operators consider TEDs to be ineffective (Okemwa et al. 2004; FAO 2007). Preliminary studies conducted in Kenya demonstrated the efficacy of TEDs (IUCN East Africa Programme 1998; Mueni and Mwangi 2001), demonstrating that bycatch is reduced, while not affecting the prawn catch. Yet, there are serious shortcomings that need to be addressed to ensure their effectiveness and to ensure compliance by trawler operators (FAO 2007). Observers lack the proper training to install TEDs when they have been damaged (FAO 2007). There have been reports of decreased prawn catches where TEDs have been installed (Okemwa et al. 2004). The TEDs in Kenya are also less durable (made of steel, not aluminium) and there are incidences where turtles were trapped in trawls even when a TED was installed, probably because the escape opening was too small (FAO 2007).

2) Pelagic trawling

a) Fishing effort:
☑ UNKNOWN

b) Methods used by your country to minimise bycatch of marine turtles in this fishery
☑ Safe handling (as per existing protocols e.g., FAO guidelines) of incidentally caught turtles (e.g. resuscitation or release by fishers using equipment such as de-hooking, line cutting tools and scoop nets)
☑ Devices that allow the escape of marine turtles (e.g. turtle excluder devices (TEDs)
☑ Spatial and temporal control of fishing (e.g. seasonal closures of fishing activities)

c) Programmes to promote implementation of measures to minimise bycatch of turtles. Please tick the boxes that apply in your country and provide details in the text boxes below.
☑ Onboard observer programmes
☑ Vessel monitoring systems
☑ Inspections (i.e. at sea, in port, at landing sites)
☑ Training programmes / workshops to train fishers on the use of bycatch reduction methods

3) Set nets

a) Fishing effort:

☑ PRESENT

b) Methods used by your country to minimise bycatch of marine turtles in this fishery
☑ Safe handling (as per existing protocols e.g., FAO guidelines) of incidentally caught turtles (e.g. resuscitation or release by fishers using equipment such as de-hooking, line cutting tools and scoop nets)
☑ Devices that allow marine turtles to avoid the nets (e.g. stick lights)
☑ Net retention and recycling schemes
☑ Spatial and temporal control of fishing (e.g. seasonal closures of fishing activities)

Details:

››› The use of set gill nets is widespread along the Kenyan coast. Both both mono- and multifilament types are used. The nets used vary in sizes. Bottom-set gillnets have a mean length of 267m and mesh size ranging from 1.5 to 4.5cm while multifilament drift gillnets have a length of about 383m and mesh sizes varying from 1.5 to 8cm. The length of monofilament drift gillnets range from 8m to 1.3km and mesh sizes from 2 to 6cm. Bottom-set gillnets and multifilament drift gillnets contribute to the highest bycatch rates. According to the 2012 bycatch assessment survey, most sea turtles captured are released back to the sea alive while only smaller percentages are locally traded or discarded dead (Kiszka, 2012).
Bycatch of turtles in set gill nets is believed to be substantial and given the widespread use of these nets, it is probably the type of gear that poses the biggest threat to turtles in Kenyan waters (Temple et al. 2019, van de Geer et al. 2022)
According to a vulnerable megafauna bycatch assessment conducted in coastal artisanal fishery in Kenya (Kiszka, 2012), bottom-set gillnets has the highest sea turtle by catch rate of about 2.51 turtles per boat per year. In addition, multifilament and monofilament drift gillnets turtle bycatch rates are 1.37 and 0.286 respectively.
Other sources: Temple et al. (2018, 2019)

If applicable, the measures are mandatory under the following regulations:
››› Fisheries Management and Development Act, 2016 (No. 35 of 2016).

4) Driftnet

a) Fishing effort

☑ PRESENT

Details:

››› ›››The drift net fishing practiced in the country is small scale where monofilament and multifilament types of gill nets are used. The nets which measure about 90 m long and 8 m in width are deployed from boats or canoes, usually beyond the reef in offshore waters. The net is set at the surface and left to drift freely with the current or kept connected to the boat and they drift together. After several hours, the net is pulled with its catch to the boat (Samoily's et al, 2011). The 3 layered net is less selective than other gill nets and sea turtle by catch has been reported in the country (Kiszka, 2012).
Turtle bycatch in monofilament driftnets was reported in Zanzibar, and most likely also happens in Kenyan waters (Temple et al. 2019).

5) Purse seine (with or without FADs)

a) Fishing effort

☑ PRESENT

Details:

››› Currently there are no licensed purse seiners in the country. However, the use of purse seine nets has previously been reported to impact on turtles and their habitats (Wamukota and Okemwa, 2008). Details on the fishery and subsequent impacts to marine turtles are not available

6) longline

a) Fishing effort

☑ PRESENT

Details:

››› ›››Longline fishing is practiced in Kwale, Kilifi, Malindi and Lamu areas though in low levels (Kiszka, 2012). It is a legal fishing method and the lines are normally characterized by single main line of monofilament nylon measuring approximately 200m, with vertical short nylon snoods and baited hooks ranging from 2 to 300 in number. The maximum snood length is about 20 m and they are attached at more than 5 m and less than 100 m interval depending on depth of water (Samoilys et al, 2011). The longline is set near the surface in offshore waters for about 4 hours and is known to capture sea turtle (E. imbricata, C. caretta and C. mydas) as by-catch. In Kiunga, Lamu county, the fishery is noted to take place in areas adjacent to the turtle feeding grounds, and has been responsible for at least some turtle mortalities in the area (Church and Palin 2003; Weru 2005). As many as 7 commercial vessels have been reported to operate in a single night in the Kiunga Marine National Reserve (Church and Palin 2003).
According to the megafauna bycatch assessment survey (Kiszka, 2012), longline fishery exhibited turtle by catch rate of about 1.1 turtles per boat per year. Further, foreign commercial longliners have been reported to fish within the boundaries of Kiunga Marine National Reserve in Lamu (Church and Palin 2003) and the impact has not been evaluated. Other sources: Temple et al. (2018, 2019)

c) Programmes to promote implementation of measures to minimise bycatch of turtles. Please tick the boxes that apply in your country and provide details in the text boxes below.
☑ Other (list and explain)

Other (list and explain)
››› 1. Beach seine fishing:
This fishery has been banned in the country since November 2001 but is illegally practiced throughout the

coast. It uses robust multifilament nylon nets with mesh size of <3 cm, about 100 - 200 m long and 3 - 4 m deep.The nets are deployed on sea grass, reef lagoons and occasionally on offshore reefs. The fishery is linked to high rate of direct coral damage (Samoily's et al, 2011, Wamukota and Okemwa 2008), turtle by catch and mortality (Kiszka, 2012; Weru 2005; Church and Palin 2003).
2. Monofilament gill net:
It is a gillnet of monofilament nylon, with small floats at the top of the net and small weights attached to the bottom. The net measures about 2.5 – 50 m long and has mesh size of 5.1 to 6.5 cm. It is usually set for up to 4 hours on reef lagoons and outer reefs slopes as well as within mangrove waterways.
The net does not biodegrade and thus remains permanently tangled on benthic habitat. It has turtle bycatch rate of 0.286 turtles/boat/year (Kiszka, 2012).
3. Spear and Harpoon fishing:
The fishery has been banned in the country since 2001 but is still practiced by some coastal communities, particularly in Gazi-Msambweni and Funzi-Bodo areas in south coast.[C1] The spear is a steel rod sharpened at one end and with or without a wooden handle on the other end, while the harpoon is a wooden pole with or without a tip. They measure about 1.5 -2.5 m and 1.0-2.5 m respectively (Samoily's et al, 2011). This type of fishing is normally used to hunt turtles (Church and Palin 2003; KESCOM 2005) but details about the turtles poached/hunted through this fishery is not available.
The Kenya Fisheries Act Cap 378 of 1989, subsidiary legislation in Kenya Gazette Notice No. 7565 Vol. CIII. No. 69 of 9 November 2001 introduced the ban on beach seining and spear guns. However, the ban of beach seining on the coast has not been complied with as most beach seiners lack alternative employment opportunities and would have been left without food and livelihoods had they complied with the ban.
The country has adopted fishery resource co-management mechanisms where the KeFS, local fishermen and other stakeholders share responsibilities in management of the resource. This started in 2007 with the establishment of Beach Management Units (BMUs) which are mandated by law to create awareness or train its members on good and acceptable fishing techniques among other roles.
In addition, KWS in liaison with KeFS undertakes joint conservation awareness campaigns where local fishermen are encouraged to report illegal fishing practices to the authorities.
Law enforcement has been intensified through increased KWS and KeFS joint boat patrols.

7) Artisanal fishing gear

a) Fishing effort
☑ PRESENT

b) Methods used by your country to minimise bycatch of marine turtles in this fishery
☑ Safe handling (as per existing protocols e.g., FAO guidelines) of incidentally caught turtles (e.g. resuscitation or release by fishers using equipment such as de-hooking, line cutting tools and scoop nets)
☑ Devices that help marine turtles avoid or escape the nets
☑ Spatial and temporal control of fishing (e.g. seasonal closures of fishing activities)
☑ Technical expertise to enhance conservation or management at the site

Details:

››› ›››The country has installed a VMS for monitoring of all Kenyan flagged fishing vessels and licensed foreign fishing vessels in the EEZ. Fishing closer than 5 nautical miles from the coast is prohibited by law, except for research purposes, which requires a special permit (Fisheries Act Cap. 378 of 1991; FAO 2007). See Thoya et al. (2019), for the response of trawl effort to this legislation. In 2003, restrictions were introduced into the fishing sector which included a closed season from 1 November to 1 March and the restriction of trawling to daylight hours (FAO 2007).
Locally Managed Marine Areas are planned in several locations along the coast and are in varying stages of progression.

c) Programmes to promote implementation of measures to minimise bycatch of turtles. Please tick the boxes that apply in your country and provide details in the text boxes below.
☑ Vessel monitoring systems (VMS), where applicable
☑ Inspections (i.e. at sea, in port, at landing sites)
☑ Training programmes / workshops to train fishers on the use of bycatch reduction methods
☑ Informative videos, brochures, printed guidelines etc

Vessel monitoring systems (VMS), where applicable

Details/future plans:

››› All Kenyan flagged fishing vessels and licensed foreign vessels have been fitted with VMS to ensure compliance with license restrictions on the fishing area. However, operations and maintenance costs of the

system is too high. In addition, there is lack of technical expertise to analyze and make use of the collected maritime data. There is need for adequate funding to ensure effective operations of the system and training of personnel on maritime data analysis as well as monitoring of the system being used by the relevant agencies.
KeFS has observers onboard trawlers to monitor their activities in collaboration with the Kenya Marine and Fisheries Department (KMFRI) who are carrying out research to determine ecological and socio-economic aspects of trawling in Kenyan waters/effectiveness of TEDs. However, observers lack sufficient training and the technical expertise to deal with faulty TEDs (FAO 2007).

Inspections (i.e. at sea, in port, at landing sites)

Details/future plans:

››› ›››Through dockside monitoring program where KeFS officers conduct regular checks at designated ports to ensure compliance with the fisheries requirements. This also guarantees the accuracy of landing data so as to monitor and support the sustainability of the fishery.

Training programmes / workshops to train fishers on the use of bycatch reduction methods

Details/future plans:
››› ›››Where on board observers are not present (e.g. during longline fishery, gill net fishery, ringnet fishery etc,), fishers are often educated on common monitoring approaches and provided with data capture protocols, identification guides and descriptions. Fishers also receive mobile phones for data entry, and are taught how to easily measure the length and weights of different species. The reports are submitted on a regular basis to KeFS.
KeFS conduct regular workshops and trainings for BMUs members on application/use of legal and acceptable fishing practices.

Informative videos, brochures, printed guidelines etc.

Details/future plans:
››› ›››Through collaboration with local NGOs and stakeholders, several videos regarding rescue of marine turtles and other informative materials eg sea turtle education posters have been developed. In addition, KeFS in liaison with key marine conservation stakeholders occasionally prepare and print education/training materials for the BMUs. KeFS is also responsible for printing of BMUs governing regulations

8) Other types of fisheries

a) Fishing effort

☑ PRESENT

b) Methods used by your country to minimise bycatch of marine turtles in this fishery

☑ Net retention and recycling schemes
☑ Technical expertise to enhance conservation or management at the site

Details:

››› ›››› Trawlers are required by law to have TEDs, however in Kenya observers require continuous training on installation and functionality of the TEDs to ensure their effectiveness and compliance by trawler operators (FAO 2007).[C1]
During the COVID-19 pandemic there were no onboard observers and the use of TE

c) Programmes to promote implementation of measures to minimise bycatch of turtles. Please tick the boxes that apply in your country and provide details in the text boxes below

☑ Inspections (i.e. at sea, in port, at landing sites)
☑ Training programmes / workshops to train fishers on the use of bycatch reduction methods

1.2.3 Are the bycatch mitigation measures described above (in 1.2.1) periodically reviewed and evaluated for their efficacy?

☑ YES

If yes, please give details.

››› Training programmes/workshops are reviewed and tailored to address specific emerging fishery issues.

1.2.4 Has your country provided technical assistance (formally or informally) to other Signatory States of the IOSEA MOU to promote the activities to mitigate incidental catch of marine turtles in fisheries?

☑ YES

If yes, please give details of the information exchanges and/or technical assistance.

››› ›››The country participates in the Western Indian Ocean Marine Science Association (WIOMSA) conferences where regional scientific information on marine resources is shared. In the last conference (July 2019), information on progress towards implementation of Turtle Excluder Devices in the WIO and effectiveness of Led Lights in Reduction of Sea Turtle Bycatch and
Mortality in Artisanal Gillnet Fishery (Kakai, 2019) was presented.

1.2.5 What legislative and practical measures has your country taken in support of UN General Assembly Resolution 46/215 concerning the moratorium on the use of large-scale driftnets?

Details:
››› ›››The ban of large-scale driftnets has been included in the Fisheries Regulations of 2018.

1.2.6 Describe illegal unreported and unregulated (IUU) fishing that is known to occur in the territorial waters of the exclusive economic zone of your country that may impact marine turtles. Does IUU fishing occur in your country?

☑ YES

a) Please indicate number of vessels per year (0, 1-10, 11-50, 51-100, 101-500, more than 500)
››› the details remain largely unknown, though monitoring and surveilance has been initiated

1.3 ADDRESSING HARVEST OF, AND TRADE IN, MARINE TURTLES

Provide sources of information supporting the above responses, include reports (governmental, departamental, university, NGO, etc.) as well as published articles (scientific or online articles); also include appropriate links to these information sources and/or attach documents to this report.

1.3.1 Are marine turtles and/or their eggs harvest in your country? Please indicate which species are harvested.

☑ YES

Details:

››› this happens as an illegal activity recognized as poaching under the Wildlife Conservation and Management Act (2013)

1.3.2 Which types of consumptive use of turtles are practiced in your country?

Use the text boxes below each rating to explain or clarify your responses.

a) Meat consumption

☑ YES

Details (e.g. species, estimated number taken per year, location, if known):
››› This often targets the green turtles, which are more common in the waters. Being an illegal activity that attracts high penalties, its prevalence and the actual level of harvest is not easily established

b) Egg consumption

☑ YES

Details (e.g. species, estimated number taken per year, location, if known):
››› This often targets the green turtles, which are more common in the waters. Being an illegal activity that attracts high penalties, its prevalence and the actual level of harvest is not easily established

c) Fat and oil consumption

☑ YES

Details (e.g. species, estimated number taken per year, location, if known):
››› This often targets the green turtles, which are more common in the waters. Being an illegal activity that attracts high penalties, its prevalence and the actual level of harvest is not easily established

d) Traditional medicine
☑ YES

Details (e.g. species, estimated number taken per year, location, if known):
››› Often used for treatment of asthma and as an aphrodisiac

e) Shell

☑ NO

Details (e.g. species, estimated number taken per year, location, if known):
››› The use of the shell is avoided due to the illegality of capturing sea turtles and possession of a sea turtle shell is evidence of crime

f) Making of tortoise shell products (bekko)
☑ NO

h) Which type(s) of consumptive use of marine turtles are the most common in your country?

Please list the most common types of consumption:
››› ›››Turtle meat is one of the most important commodity traded for food and income among the local communities (Nzuki 2005b; van de Geer et al, 2022). Consumption of turtle meat is deeply engrained in Kenya's coastal culture and it is most valuable as it believed to be an aphrodisiac for men in some communities.

1.3.3 Does your country have active legislation to prohibit direct harvest and domestic trade in marine turtles, their eggs, parts and products?
☑ YES

If yes, please provide details (title/date) of the relevant legislation, as well as any exemptions (e.g. for traditional use) under that legislation and comment on effectiveness of the legislation in terms of enforcement.

If more rows are required, please contact the secretarat at iosea@un.org

	Legislation title	Legislation date	Is traditional use allowed under this legislation?	Is the legislation enforced?	What are the challenges?
	Inadequate capacity to implement legislation	Yes	No	2013	Wildlife Conservation and Management Act

1.3.6 Please describe the ILLEGAL harvest of marine turtles and eggs in your country by answering the questions below.

a) Does illegal harvest of marine turtles occur in your country?
☑ YES

Details:

››› Marine turtles and their associated products are protected under the Wildlife (Conservation and Management) Act Cap 2013 and the Fisheries Act Cap 378 (2016 review) which specifically prohibit utilization of any form of turtles, their eggs, meat, oil, shells. Turtles are regarded as wildlife. However, this legislation

does not protect turtle nesting and foraging habitats, other than the areas included in marine parks and reserves (Okemwa et al. 2004).
›››Illegal trade in turtle products is rampant in Kenya. Trade and associated poaching are particularly high in Malindi and in Lamu Archipelago

b) Please list the specific locations where illegal harvest is known to occur, if possible.

Details (examples of areas where illegal harvest is known to occur):
››› ››› It is known to occur along the entire Kenyan coastline.

1.3.7 Which of the following adverse economic incentives are encouraging illegal take of marine turtles in your country?

☑ Lack of affordable alternatives to turtle parts and products
☑ Ease of access to the turtle resource (e.g. proximity to nesting beaches, or ease of land/water access)
☑ Lack of patrolling and enforcement at nesting beaches and nearshore areas
☑ Low cost of land near nesting beaches

1.3.8 Has your country taken any measures to try to correct these adverse incentives?

☑ YES

If yes, please describe these measures in detail.

Details:
››› The government of Kenya through KeFS and KWS has initiated talks with Tanzanian government to control/limit use of explosives and poisonous chemicals as a means of fishing.

1.3.9 Are there touristic activities linked in marine turtles in your country?

☑ YES

If yes, please indicate which type:

	No	Yes
a) Nesting turtle observation	☐	☑
b) Hatching releases	☐	☑
c) Swimming/ snorkeling activities	☐	☑
Other (please describe)	☐	☐

Details:
››› Local NGOs and CBO’s encourages visitors to donate towards conservation of sea turtles in Kenya. The visitors are also able to actively participate in turtle conservation activities. This provides an opportunity to understand more about the species but also creates a challenge of best practices and conservation protocols not always being followed.

1.3.10 Are there any standard and government-certified protocols to ensure that touristic activities do not harm turtles and/or hatchlings?

☑ YES

Please briefly describe the type of protocols used, references or links, if available.

Details:
››› Kenya National Sea Turtle Protocols as well as best practice protocols developed by NGO’s and CBO’s.

1.3.11 Does your country have mechanisms in place to identify domestic and international illegal trade routes (for illegally traded marine turtles, eggs and derivatives)?

Please provide references to any published reports (e.g. already prepared for CITES purposes) that give a more ample explanation.
☑ YES

Details:
››› These measures are very low and more capacity building is required. Currently all utilisation and trade in

sea turtle products are illegal in Kenya

1.3.12 Please describe any activities/projects that aim(ed) to reduce illegal take of and/or trade in marine turtles in your country.

If more rows are required, please contact the secretarat at iosea@un.org

	Title of the project/activity	Implemented by	Start year	End year (if completed)	How does the project involve local communities?	Lessons learned	Project website or other links with project description
	https://www.unep.org/explore-topics/oceans-seas/what-we-do/enabling-sustainable-resilient-and-inclusive-blue-economies-0#:~:text=Go%20Blue%20Project%20The%20Go%20Blue%20Project%20is,25%20million%20for%20a%20period%20of%204%20years.	Project ongoing	The project seeks to enhance natural resource conservation and management	2024	2021	UNEP Nairobi Convention	GO BLUE
	https://kemfsed.org/	Project ongoing	The project seeks to enhance the Blue Economy agenda	2025	2020	Government of Kenya	The Kenya Marine Fisheries and Socio-Economic Development

1.3.13 Has you country submitted the annual illegal trade report to CITES, including information relevant for marine turtles?

Please provide a copy of this report or a link to the published report online, if possible.
☑ NO

Details:
››› Kenya does not allow the trade in sea turtles and their products

1.3.14 Are there any compliance and/or trade issues (either domestic or international) that your country would like to raise at the upcoming IOSEA MOS or otherwise through the IOSEA Secretariat?

☑ NO

1.4. MINIMIZING MORTALITY THROUGH NESTING BEACH PROGRAMMES

Provide sources of information supporting the above responses, include reports (governmental, departmental, university, NGO, etc.) as well as published articles (scientific or online articles); also include appropriate links to these information sources and/or attach documents to this report.

1.4.1 Tick the boxes that apply to indicate whether your country has any of the following measures in place to minimise the mortality of eggs, hatchlings and/or nesting females.

Please indicate if these measures are being implemented at the IOSEA Network sites and index beaches that you described in question 0.2.

Measures

a) Nesting beach monitoring (eggs and nesting females)

☑ YES

Details:

››› ›››KWS is mandated by law to protect wildlife including sea turtles. In Kwale, Mombasa and Kilifi counties, monitoring of turtle nesting grounds is carried out by local community members (TCGs members) on monthly basis and information submitted to nearby KWS station. Local NGO's and CBO's in partnership with KWS and the local community run a turtle monitoring and conservation programmes, where organization employees or community members are incentivized to monitor and protect turtle nesting activities until hatching occurs (Olendo et al, 2019). Some private hotel investors along the beach have established artificial hatcheries were turtle eggs prone to threats such predation and poaching are relocated to and monitored until they hatch.

b) Nesting beach protection (patrolling)

☑ YES

Details:

››› All sea turtle habitats are protected by law in Kenya

c) Predator control

☑ YES

Details:

››› There are efforts to keep off predators where monitoring is being conducted. Where threats are extremely high nest translocation is usually conducted

d) Nest screening (placing wire screens over the buried nests)

☑ YES

Details:

››› where nest translocation is done, screening is often adopted to identify and protect the new site

e) Vehicle access restrictions

☑ YES

Details:

››› all vehicles are not allowed on the beach in Kenya

f) Regular removal of debris / clean-up programmes

☑ YES

List recent clean-up programmes/references and links:
››› ››› In Kenya debris is normally removed or collected during international annual events such as the World Wetlands Day on 2nd February, World Environment Day on 5th June, World Ocean's Day on 8th June and on World Sea Turtle Day on the 16th June. In addition, through the KWS Beach Management Unit programme, more regular beach clean-ups are carried out in partnership with local community and other stakeholders. Ongoing beach cleaning team in place in Watamu Marine Park, paid for by beach frontage owners. Approximately 2,000 kg of debris is removed from the Watamu Marine National Park beach each month and taken to EcoWorld for recycling.

g) Has re-vegetation of dunes at nesting beaches been carried out, using native vegetation?

☑ YES

Details:

››› Watamu MPA riparian zone has had some rehabilitation efforts

h) Building location design regulations (coastal protection)

☑ YES

Details:
››› This is largely guided and controlled through an Integrated Coastal Zone Management (ICZM) policy, 2014,

Environmental Management and Coordination Act (EMCA), 1999 and the Physical Planning Act,1996.

i) Light pollution reduction (direct lights visible from the beach)

☑ YES

Details:

››› ››› Mainly achieved through sensitization of property owners along the beaches on effects of lighting on sea turtle nesting and subsequent conservation implications. The awareness creation programmes have been inconsistent and localized (centered in few areas) due to insufficient resources to cover entire coast. There are plans to intensify and extend these sensitization campaigns to all sea turtle nesting important areas to ensure successful reduction of light pollution

k) Are these measures in place in protected areas only, or also outside of established protected areas?

In protected areas only (list the measures above e.g. a, b, c, etc.):
››› The Conservation and protection of sea turtles and their habitats apply to both protected and unprotected areas

1.4.2 To what extent is egg relocation practiced in your country (including relocation to hatcheries)?

☑ Egg relocation is practiced on 5-49% of nesting beaches

Please provide the reasons:
››› Nest relocation is a widespread practice in Kenya. Areas where nests are relocated include Kiunga, Lamu, Malindi, Watamu, Kilifi, Mombasa and Kwale County. Several sites use small hatcheries (<30 clutches), these include Mombasa and Kwale County.
› Hatching success of relocated clutches in Lamu is 77.8 ± SE 1.4% (Olendo et al, 2017). Hatching success of clutches relocated within Watamu Marine National Park (WMNP) was 82% (95% confidence interval = 77-85, n = 335) and clutches relocated from farther away to the WMNP was 81% (95 CI = 74-87, n = 91) (van de Geer et al. 2024).
Hatcheries are successfully incubating clutches, although there are challenges with infestations of ants and fungi.
Sensitization of stakeholders needs to be conducted so that clutches are moved only when necessary and not as a tourist attraction. Reports of hatchlings being held back, or nests opened early at advertised times, is a concerning trend at several locations

1.4.3 Has your country undertaken an evaluation of the effectiveness of its nesting beach management programmes in terms of maximizing the recruitment of marine turtle hatchlings?

☑ YES

Please indicate when the evaluation took place, and provide a reference or a copy of any published or unpublished reports describing any lessons learned.

Details:
››› ››› Beach Management Units established under the FCMA, 2016 are through supervision of county governments in charge of management of beach segments within their jurisdiction. The BMUs activities are often evaluated by KeFS in collaboration with the county government. Additionally, there is an ICZM Policy (2014) and a shoreline management strategy which guide in all activities along the coastline.

OBJECTIVE II: PROTECT, CONSERVE AND RESTORE MARINE TURTLE HABITATS

2.1 MEASURES TO PROTECT AND CONSERVE MARINE TURTLE HABITATS

Provide sources of information supporting the above responses, include reports (governmental, departmental, university, NGO, etc.) as well as published articles (scientific or online articles); also include appropriate links to these information sources and/or attach documents to this report.

2.1.1 Please list Protected Areas (PAs), sanctuaries or temporary exclusion zones that were created to protect marine turtle habitat. Please provide the official name and date of establishment.

Details:
››› The Kisite Marine National Park established in 1978
The Mpunguti Marine National Reserve established in 1978
The Diani-Chale Marine National Reserve established in 1995
The Mombasa Marine National Park established in 1986
The Mombasa Marine National Reserve established in 1986
The Watamu Marine National Park established in 1968
The Watamu Marine National Reserve established in 1968
The Malindi Marine National Park. established in 1968
The Kiunga Marine National Reserve established in 1979

2.1.2 Has you country developed any incentives to encourage protection of marine turtle habitat outside of protected areas?

Details:
››› Incentives for sea turtle conservation. All community-led conservation initiatives along the Kenyan coast are conducted on a voluntary basis, with no specific incentives being administered by the government of Kenya. However, it is worth noting that one non-governmental institution in Watamu and Diani is implementing a sea turtle bycatch release and compensation programme, where fishers are encouraged to present sea turtles caught accidentally for tagging and release, and compensation is provided for the repair of the fishing gear involved.

References and links:

››› Oman, R. (n.d.). IOTN17-05-THE LOCAL OCEAN TRUST: WATAMU TURTLE WATCH BY-CATCH NET RELEASE PROGRAMME | IOTN. Retrieved February 14, 2024, from https://www.iotn.org/iotn17-05-the-local-ocean-trust-watamu-turtle-watch-by-catch-net-release-programme/

2.1.3 Is marine water quality (including marine debris) monitored near turtle habitats? If yes, describe the nature of this monitoring and any remedial measures that may have been taken.

☑ YES

Details:

››› Plastics weight Data is collected during plastic trash collection activities at some beaches along the Kenyan coast, disaggregated by plastic types. This includes (1) the periodic International Coastal Cleanup events,(2) the frequent cleanup efforts by Turtle Conservation Groups (TCGs) and local hotels along designated beaches, and (3) The monthly monitoring of trash/waste disposal by the Kenya Wildlife Service (KWS) on beaches adjacent to MPAs through institutional strategic adaptive management programme. During these initiatives, plastic weight data is collected, disaggregated by type.
Water quality assessments are undertaken by KMFRI in collaboration with KWS within Marine Protected Areas (MPAs).
Remediation. Linkages are made with plastics companies to collect and recycle the plastics into useful household items such as buckets and basins. Plans are also underway to provide plastic balers to community-led TCGs to collect and compress plastics for sale to plastics companies as a financial incentive to sustain sea turtle conservation work In Kenya.

References and links:

››› Okuku, E. O., Imbayi, K. L., Omondi, O. G., Wayayi, W. V. O., Sezi, M. C., Maureen, K. M., Mwangi, S., & Oduor, N. (2019). Decadal Pollution Assessment and Monitoring along the Kenya Coast. Monitoring of Marine Pollution. https://doi.org/10.5772/intechopen.82606

Okuku, E. O., Ohowa, B., Mwangi, S. N., Munga, D., Kiteresi, L. I., Wanjeri, V. O., Okumu, S., & Kilonzo, J. (2011). Sewage pollution in the Coastal waters of Mombasa City, Kenya: A norm Rather than an Exception. International Journal of Environmental Research, 5(4), 865–874. https://doi.org/10.22059/ijer.2011.444
WWF-Kenya. (n.d.). From Waste to Value. Retrieved February 15, 2024, from https://www.wwfkenya.org/from_waste_to_value

2.1.4 Are measures in place to prohibit the use of poisonous chemicals and explosives in the marine environment?

☑ YES

Use the text box to elaborate on your response.

Details:
››› The use of explosives, poison or other noxious substances for purposes of catching fish is prohibited under the Fisheries Management and Development Act of, 2016. The use of explosives and poisonous substances for fishing is synonymous with Tanzanian fishing, with accounts of these infringements crossing over to the Kenyan side of the Kenya-Tanzania border. The following efforts have been put in place to address this:
Enforcement· To ensure effective enforcement of the law, patrols and monitoring are being intensified with a multi-agency patrol unit having been established in the Kenya-Tanzania transboundary area. Additionally, a National Contingency plan in response to marine pollution was developed and is being implemented by the Kenya Maritime Authority.
Community awareness and sensitisation. There has been considerable effort to build the capacity of Beach Management Units (BMUs) towards addressing illegal transboundary fisheries incidents. This includes fisher community awareness and sensitisation over the Kenya legal frameworks around fisheries and the conservation of endangered, threatened and protected species, including sea turtles.
Transboundary management measures. Efforts dating as far back as early the early 2010s have been underway to establish a transboundary marine conservation area between Kenya and Tanzania with the aim of streamlining sustainable fishing efforts throughout the region and address transboundary fisheries illegalities, Inter-country dialogues are currently underway with support from the German government to cement agreements through the development and implementation of a concretised action plan with responsibilities from both the Kenyan and Tanzanian government.

References and links:

››› Braulik, G. T., Rubens, J. R., & Macaulay, J. (2020). Acoustic Monitoring of Blast Fishing in Tanzania in 2018 and 2019 (Final Report; p. 35). Downstream Research & Conservation. https://research-repository.st-andrews.ac.uk/bitstream/handle/10023/21119/Acoustic_Monitoring_Blast_fishing_in_TZ_Final_2020.pdf?sequence=1
Crona, B., & Rosendo, S. (2011). Outside the law? Analyzing policy gaps in addressing fishers' migration in East Africa. Marine Policy, 35(3), 379–388. https://doi.org/10.1016/j.marpol.2010.11.003
Hampton-Smith, M., Mika, S., Bower, D., & Argent, N. (2021). Reduction of Blast Fishing in Tanzania: Analysis of Outcomes and Deterrence Measures. https://rune.une.edu.au/web/handle/1959.11/31603
MPRU, & KWS. (2017). A Proposed Marine Transboundary Conservation Area Between Kenya and Tanzania. https://wedocs.unep.org/xmlui/handle/20.500.11822/25689
Kenya Marine National Contingency Plan, 293 (2020). https://www.nema.go.ke/images/Docs/Mumbo/Marine%20and%20Navigable%20Waters%20NCP_JAN_2020-min.pdf
State Department for fisheries, Aquaculture and the Blue Economy. (2022). KENYA MARINE FISHERIES SOCIO-ECONOMIC DEVELOPMENT (KEMFSED) PROJECT (Third Quarter Progress Report, p. 56). National Government of Kenya. https://kemfsed.org/wp-content/uploads/2022/11/KEMFSED-Quarterly-Progress-Report-FY2_Jan-March_2022.pdf

2.2 RESTORATION OF DEGRADED MARINE TURTLE HABITATS

Provide sources of information supporting the above responses, include reports (governmental, departmental, university, NGO, etc.) as well as published articles (scientific or online articles); also include appropriate links to these information sources and/or attach documents to this report.

2.2.1 What efforts are being made to recover degraded coral reef habitat? Give details (location, how long efforts have been carried out, effectiveness, lessons learned, future plans, etc).

☑ YES see below

Details/future plans:

››› Policy Frameworks. The Coast Development Authority has developed a National Coral Reef Restoration

Protocol to advise the restoration initiatives in Kenya.
Passive coral reef restoration. Artisanal fisheries pose the greatest threat to sea turtle habitats in Kenya (ie, coral reefs and seagrass beds). To this effect, Kenya has established 5 marine reserves (commercial fishing restricted) covering a combined total of 735 km2, and four marine parks (complete closures) covering 55 km2 have been established to reduce local fishing pressure and preserve the habitats therein.
Active coral reef restoration. Coral gardening (with and without nursery phase) is being implemented in various MPAs and marine community-led conservation sites. REEFolution, a local NGO, is currently championing nursery phased coral gardening in Shimoni with restoration sites around the Kisite-Mpunguti MPA and the adjacent Wasini and Mkwiro Co-Management Areas - so far, they have established over 3,600 artificial reef structures with more than 5,000 m2 having been restored. Other sites along the Kenyan coast do not entail nursery phases, and are implemented on an ad-hoc basis in the MPAs of Mombasa, Wasini and Kiunga.

References and links:

››› Karisa, J. F., Obura, D. O., & Chen, C. A. (2020). Spatial heterogeneity of coral reef benthic communities in Kenya. PLOS ONE, 15(8), e0237397. https://doi.org/10.1371/journal.pone.0237397
Knoester, EG., Rienstra, JJ., Schürmann, QJF., Wolma, AE., Murk, AJ., & Osinga, R. (2023). Community-managed coral reef restoration in southern Kenya initiates reef recovery using various artificial reef designs. Frontiers in Marine Science, 10. https://www.frontiersin.org/articles/10.3389/fmars.2023.1152106
REEFolution. (n.d.). how we work—REEFolution. Retrieved February 15, 2024, from https://reefolution.org/how-we-work/

2.2.2 Are efforts being made to recover degraded mangrove habitats that are important for turtles?

☑ YES see below

If yes, give details (location, duration, effectiveness, lessons learned, future plans etc.)

Details/future plans:
››› Natural regeneration: There is currently a ban on mangrove harvesting throughout the Kenyan coast, except in Lamu County. The objective behind this is to allow the mangroves to regenerate and maintain ecological goods and services, including the preservation of fish spawning sites, fish nurseries and critical habitats for endangered, threatened and protected species (including the sea turtles). For Lamu, an active moratorium has been in effect for multiple decades, causing the mangrove to overgrow and collapse, clearing last tracts of mudflat beds.
Artificial regeneration: Two approaches are used in this intervention. The first includes direct planting of propagules or saplings at designated sites marked for restoration. Such sites must have calm hydrological conditions to ensure that planted propagules are not excavated and flushed away by tides through active creeks. The second approach includes restoration of the hydrological conditions to establish tidal conditions that are conducive for active planting of propagules. To this end, innovation has been rampant with communities being involved to establish propagule nurseries for various mangrove species, and PVC pipes being used to transplant new seedling as means of slowing down tidal current speeds in mangrove creeks and providing a conducive environment for restoration efforts.
Efforts are currently in place to restore the mangrove forests in key sites with all the coastal counties of Kenya. These are being spearheaded by different non-governmental organisations working in conjunction with the Kenya Fisheries Service, the Kenya Wildlife Service and the Kenya Marine and Fisheries Research Institute, including the World Wide Fund for Nature - Kenya, The Nature Conservancy, Northern Rangelands Trust, Wetlands International, Plan International, Local Ocean Trust, Bahari Hai, etc. Efforts that have been carried out include stress mapping, hydrological restoration, and active mangrove planting. However, the data on restoration efforts is currently not centralised, with the extent and rates of success being hosted by a myriad of organisations.

References and links:
››› Kiprono, A. (2021). An Assessment of the Effectiveness of Mangrove Restoration Projects Along the Kenyan Coast [Thesis, University of Nairobi]. http://erepository.uonbi.ac.ke/handle/11295/155712

2.2.3 What efforts are being made to recover degraded seagrass habitats? Give details (location, duration, effectiveness, lessons learned, future plans etc.).

☑ YES, see below

Details/future plans:

››› Passive seagrass restoration. Artisanal fisheries pose the greatest threat to sea turtle habitats in Kenya (ie, seagrass beds). To this effect, Kenya has established 5 marine reserves (commercial fishing restricted) covering a combined total of 735 km2, and four marine parks (complete closures) covering 55 km2 have been established to reduce local fishing pressure and preserve the habitats therein.

Active seagrass restoration. Trials have been conducted for seagrass restoration with promising results, with some efforts being dedicated towards this in Wasini by the local communities. However, there is no available data disclosing the effort levels, extent and degree of success. It is also worth noting that such efforts are still at pilot/trial levels.

References and links:

››› Mutisia, L. N. D. (2009). Restoration of Kenyan seagrass beds: A functional study of the associated fauna and flora. http://hdl.handle.net/1834/7788
Uku, J., Daudi, L., Muthama, C., Alati, V., Kimathi, A., & Ndirangu, S. (2021). Seagrass restoration trials in tropical seagrass meadows of Kenya. Western Indian Ocean Journal of Marine Science, 20(2), Article 2. https://doi.org/10.4314/wiojms.v20i2.6

OBJECTIVE III: IMPROVE UNDERSTANDING OF MARINE TURTLE ECOLOGY AND POPULATIONS THROUGH RESEARCH, MONITORING AND INFORMATION EXCHANGE

3.1 STUDIES ON MARINE TURTLES AND THEIR HABITATS

provide sources of information supporting the above responses, include reports (governmental, departmental, university, NGO, etc.) as well as published articles (scientific or online articles); also include appropriate links to these information sources and/or attach documents to this report.

3.1.1 Please list monitoring programmes that are currently in place or are being planned in your country.

Please enter details in the following table. If more rows are required, please contact the secretarat at iosea@un.org

	Site geographical name (refer to questions 0.1 and 0.2)	Species genetic stock	Start year	Duration of the monitoring programme	Nature of monitoring	Population trend	Is this a protected area?

You have attached the following documents to this answer.

Studies.docx

3.1.2 Has you country undertaken an evaluation of its marine turtle monitoring programmes?

☑ YES

Please indicate when the evaluation took place and describe lessons learned.

Details:
››› KESCOM was formed in 1993 to conduct the very first assessment of sea turtle monitoring and conservation in Kenya, engaging in active training, establishment of TCGs along the coast and data collection.
Van de Geer et al (2022), using a mixed methods approach, which combined an exhaustive literature review and expert elicitation, assessed the distribution and magnitude of nesting, foraging areas, connectivity, and anthropogenic threats for these species in East Africa, including Kenya.
In June of 2023 , WWF Turtle and Plastics planning meeting which was centered on planning how to derive action points to streamline its uptake, particularly by having TCGs embrace the Kasa application, which is a digital representation of the data sheets presented in the Guidelines to upscale the monitoring activities.
Turtle monitoring and protection conducted by TCG's along the Malindi-Ungwana Bay were assessed by Bahari Hai and KWS in 2022 and again in 2023, both assessments were followed by in-depth training of the same TCG's in line with the national sea turtle protocols.
Baseline assessment of sea turtle nesting and sea turtle mortalities for the Malindi-Ungwana Bay region following the SWOT Minimum Data Standards and using mobile app for digital data collection was conducted by the TCG's along that section of coastline, in collaboration with Wildlife Research and Training Institute, Kenya Wildlife Service, Olive Ridley Project, Kenya Fisheries and Bahari Hai. Supported by Fauna & Flora International.

References and links:

››› Nzuki, S. K., Mulwa, E. M., & Okemwa, G. (2006). Kenya Sea Turtle Conservation Committee, Mombasa,

Kenya. In Proceedings of the Twenty-third Annual Symposium on Sea Turtle Biology and Conservation, 17 to 21 March 2003, Kuala Lumpur, Malaysia (Vol. 536, p. 83). Southeast Fisheries Science Center. Link

3.1.3 Which of the following methods have been or are being used to identify migration routes of turtles?

Use the text boxes to provide details

a) Tagging (flipper)

☑ YES

Details (e.g., list species, duration of programme, start and end year):

››› Species: Chelonia mydas, Eretmochelys imbricata, Caretta caretta, Lepidochelys olivacea
WWF -
LAMCOT - 1992 to present
Local Ocean Conservation - 1998 to present
Bahari Hai - 2021 to present
Kenya Conservation of Aquatic Resources - 2023 to present
Jumba Turtle Patrol - 2013 to present

References and links:

››› Okemwa, G., Weru, S., Olend, M. (2009). Nesting ecology of green turtles in the Lamu archipelago, Kenya. Proceedings of the 6th WIOMSA Symposium, Mombasa, Kenya Link
Olendo, M., Munga, C. N., Okemwa, G. M., Ong'anda, H., Mulupi, L., Mwasi, L., & Mohamed, H. (2016). Current status of sea turtle protection in Lamu Seascape, Kenya: Trends in nesting, nest predation and stranding levels. Western Indian Ocean Journal of Marine Science, 15(1), 1-13. Link
van de Geer, C. H., Broderick, A. C., Carter, M. I., Irei, A. A., Kiponda, F. K., Kiptum, J., ... & Godley, B. J. Two decades of community-based conservation yield valuable insights into marine turtle nesting ecology. Oryx, 1-13. Link

b) Satellite tracking

☑ Yes

Details (e.g. species, genetic stock):

››› In 2008, 15 adult green turtles off Lamu archipelago were fitted with sat nav transmitters, north coast (WWF-Kenya, unpublished data)
Satellite tracking of marine turtles was done by a team in El Dorte University in 2014 to identify the main feeding sites of marine turtle nesting in Kenya and assess the interaction between marine turtle and industrial fisheries during their migration. Three nesting sea turtles were tracked from a beach in the North coast of Kenya (-3.83°S, 39.82°E). One of the turtle moved North to a known foraging creek (Takaungu), while another moved to a foraging ground on the South (Gazi). The third turtle just foraged on the near shore reef where it was tagged.
In early 2022, three adult female green turtles were tracked with satellite transmitters of Tiwi beach, Kenya’s south coast (Tiwi Turtle Police, unpublished data). One of the females migrated along the north coast, reaching Lamu archipelago before the satellite stopped

References and links:

››› Machaku, R., M. Dalleau and J. Bourjea. 2014. University of Eldoret satellite tracked green sea turtles from Kenya 2012 under SWIOFP (http://seamap.env.duke.edu/dataset/1120)
Halpin, P.N., A.J. Read, E. Fujioka, B.D. Best, B. Donnelly, L.J. Hazen, C. Kot, K. Urian, E. LaBrecque, A. Dimatteo, J. Cleary, C. Good, L.B. Crowder, and K.D. Hyrenbach. 2009. OBIS-SEAMAP: The world data center for marine mammal, sea bird, and sea turtle distributions. Oceanography. 22(2):104-115.
WWF tracking program: http://www.seaturtle.org/tracking/index.shtml?project_id=307

c) Genetic studies

☑ YES

Details (e.g. species, genetic stock):

››› Previous work has characterized the genetic population structure of green turtle breeding populations throughout the SWIO using mtDNA control region sequences from 15 rookeries in the region, including Kenya

(Bourjea et al. 2007). Kenya was placed within the Central genetic stock, along with Tromelin, Mozambique and the islands in the north of the country. The two other genetic stocks (or management units) were identified as the South (Europa and Juan de Nova) and North genetic stocks (rookeries in the Seychelles granitics and Amirantes).
Jensen et al. (2020) integrated genetic results from Mixed Stock Analysis with simulations of ocean dispersal patterns. Authors used samples from Mida Creek and Lamu (n = 67) from both living and dead individuals taken as by-catch in the artisanal fishery. Juveniles originating from the nesting beaches of the Central Area(including Kenya) are mainly under the influence of the Northeast Madagascar Current (NEMC) and then the Somali Current (SC), with individuals dispersing northwards along the coast of Tanzania, Kenya and Somali. During the winter monsoon, part of these juveniles are entrained eastward by the SECC. Juveniles also disperse southwards, widely into the Mozambique Channel, where they are pushed by the Mozambique Current (MC).

References and links:

›››› Bourjea, J., Lapegue, S., Gagnevin, L., Broderick, D., Mortimer, J. A., Ciccione, S., ... & Grizel, H. (2007). Phylogeography of the green turtle, Chelonia mydas, in the Southwest Indian Ocean. Molecular Ecology, 16(1), 175-186. https://archimer.ifremer.fr/doc/2007/publication-2185.pdf
Bourjea, J., Mortimer, J. A., Garnier, J., Okemwa, G., Godley, B. J., Hughes, G., ... & Muths, D. (2015). Population structure enhances perspectives on regional management of the western Indian Ocean green turtle. Conservation Genetics, 16, 1069-1083. https://hal.univ-reunion.fr/hal-01306706/file/Population%20structure%20enhances%20perspectives%20on%20regional_hal.pdf
Jensen, M. P., Dalleau, M., Gaspar, P., Lalire, M., Jean, C., Ciccione, S., ... & Bourjea, J. (2020). Seascape genetics and the spatial ecology of juvenile green turtles. Genes, 11(3), 278. Link

d) Other (list and provide details)

Details (e.g. species, genetic stock):
›››› Photo Identification:
Olive Ridley Project (ORP) - 2018 to present
ORP has been conducting sea turtle in-water monitoring in Diani-Chale National Marine Reserve (DCMR) in Kenya's South Coast since 2018. Underwater surveys are conducted on a regular basis to collect data on sea turtle occurrence, abundance, and distribution, incorporating photographic identification (Photo-ID) as a capture-mark-recapture method. A pilot study was conducted in 2023 in Kisite-Mpunguti Marine National Reserve and some guidelines for future work were submitted in a report.
Bahari Hai (BH) PhotoID - 2023 to present
BH has been conducting sea turtle in-water monitoring in Watamu Marine Park & Reserve and surrounding dive sites and, Mida Creek Reserve, located in Kenya's North Coast since 2023.. Underwater surveys are conducted on a regular basis to collect data on sea turtle occurrence, abundance, and distribution, incorporating photographic identification (Photo-ID) as a capture-mark-recapture method.
Drone Surveys
ORP initiated in 2024 a drone monitoring program to assess sea turtle presence and use in shallow coastal lagoons in Diani-Chale MNR.
Species: Chelonia mydas, Eretmochelys imbricata

References and links:

›››› Hancock, J. M., Choma, J., Mainye, L., Wambi, P., Stelfox, M., Polyak, M. M., ... & Köhnk, S. (2023). Using Photo-ID to document and monitor the prevalence of fibropapilloma tumours in a foraging aggregation of green turtles. Frontiers in Marine Science, 10, 1217683. Link

3.1.4 Have the studies mentioned in 3.1.3 helped to identify foraging and migration areas of marine turtles in your country?

☑ YES

Details, examples:
›››› In October 2015, a juvenile hawksbill turtle (Eretmochelys imbricata) bearing flipper tags E4495/E4496 with the address of the Seychelles Department of Environment was intercepted in Watamu by Local Ocean Conservation. The turtle had been tagged at St Joseph Atoll by the team at Save Our Seas, Seychelles, as part of a long-term study of the juvenile turtles foraging in the shallow waters of D'Arros Island and St Joseph Atoll. The turtle had traveled a straight line distance 1,400 km from St Joseph to Ngomeni, Kenya.
In November 2015, a juvenile green turtle (Chelonia mydas) was captured in a net and tagged in the left rear flipper (KES0113; Inconel 681 tag from the National Band and Tag Company, Kentucky, USA) by Local Ocean Conservation, and released in the Watamu Marine National Park the same day. Four years later, in September 2019, the same turtle was captured by research staff from the Seychelles Islands Foundation (SIF) Public Trust

in the lagoon of Aldabra Atoll, Seychelles, nearly 950 km (straight line distance) from Watamu.
A tagged adult female sea turtle (tag number SCA1868), was found dead and reported by MABICO in February 2023 near Marareni, Malindi-Ungwana Bay. The turtle was first tagged while nesting at Aldabra Atoll, in May 2008 of the West Grand Terre group of beaches, on the west coast of Aldabra, Seychelles.
Collaborative genetic studies at a regional level unraveled the migratory connectivity of green turtle populations in Kenya.
References and links:

References and links:

››› Jensen, M. P., Dalleau, M., Gaspar, P., Lalire, M., Jean, C., Ciccione, S., ... & Bourjea, J. (2020). Seascape genetics and the spatial ecology of juvenile green turtles. Genes, 11(3), 278. Link
Sanchez, C. , Lucas, C , Odhiambo, O , Beswick,J , Van de Geer, C (2020). A Juvenile Green Turtle Long Distance Migration in the Western Indian Ocean
https://www.researchgate.net/publication/339676882_A_Juvenile_Green_Turtle_Long_Distance_Migration_in_the_Western_Indian_Ocean
https://www.nation.sc/archive/247083/young-hawksbill-turtle-migrates-kenya-from-the-amirantes

3.1.5 Is the use of traditional ecologial knowledge in research being promoted?
☑ UNSURE

Explanation/examples:

››› In 2005, Muaza and Nzuki studied three sites in south coast Kenya i.e. Msambweni, Funzi and Bodo studied with an overall objective of characterizing the existing sea turtle nesting and foraging habitats. Nesting beach stretches in Msambweni and Funzi were evaluated based on human and natural predation indices and environmental factors which considered temperature measurements. The targeted foraging grounds consisted of seagrass beds and associated food items which included sponges and mollusks. Participatory approaches as well a stratified sampling design were used in studying both habitats.
In a study about perceptions about trends and threats regarding sea turtles in Kenya, Wamukota and Okewa (2009) conducted a Participatory Rural Appraisal (PRA) that included included consultations, planning meetings to standardize techniques and site visits within 23 communities to identify contact personnel, determine entry points and create rapport with the local people. The project was undertaken by a multi-disciplinary team with a good understanding of rural institutions and processes. Within the selected sites, the team visited villages, beaches, fishermen camps, boat yards, fishing vessels, landing sites, fisheries and wildlife offices and tourist establishments. Over 99 transect walks were accomplished targeting sea turtle nesting and foraging areas. Data gathering took eight months. Formal interviews were administered to 605 respondents. Fishermen and other local persons comprised 350 and 200 respondents respectively, the rest were government officials and key informants. Informal interviews were also administered to 189 local stakeholders who were randomly selected and 99 key informants from selected sites along the Kenyan coast.
Bahari Hai and Olive Ridley Project are identifying and monitoring potential sea turtle foraging grounds with the help of local fishermen.

References and links:

››› Muasa, J., & Nzuki, S. (2005). Participatory habitat characterization and GIS data base development for the conservation and management of Sea Turtles in South Coast Kenya.
https://aquadocs.org/bitstream/handle/1834/1460/2006714172416117Simon%20Nzuki%20final?sequence=1

3.1.6 Give a list of relevant literature that includes information from studies carried out in your country on marine turtle populations and their habitats, sorting them by topic.

a) Bycatch mitigation measures

Details (e.g. numbers and species of released turtles, type of fishery and gear used, method for monitoring survival, result):
››› Ongoing sea turtle reduction programs are being implemented by Bahari Hai , including gear modification (ongoing, unpublished data).
Mwatha (2002) tested the performance of the Turtle Excluding Device (TED) in Kenya’s north coast using a twin net beam trawler, with one net ringed with the TED and the other acting as a control and found were used. ANOVA tests showed that there was no significant difference in catches between the two nets. However there was a significant difference ($P<0.05$; $P=0.0005$) between the discards in the two nets. A total of 18 incidental captures of green and hawksbill sea turtles were recorded during the stud period, corresponding to 2 mortalities.
In a study conducted by Kakai (2019), three sites on the north coast of Kenya, i.e. Watamu, Ngomeni, and

Bwana Said, were studied with the
overall objective of assessing the effectiveness of LED lights in the reduction of sea turtle bycatch in the bottom-set gillnet fishery. A total of 10 boats with pairs of control and illuminated nets were deployed during the study, with 56 turtles caught in control nets, while 30 were caught in illuminated nets. The mean catch per unit effort (CPUE) of target species was similar for both control and illuminated nets. In contrast, the mean CPUE of sea turtles was reduced by 64.3% in illuminated nets. This statistically significant decrease ($p < 0.04$) in sea turtle catch rate suggests that net illumination could be an effective conservation tool. A total of 86 sea turtles were caught during the study
period. Of these, 56 were caught in the control nets constituting 41 green, 9 hawksbills, 5 loggerheads, and 1 olive ridley turtle. The illuminated nets caught 30 turtles of which 21 were green, 5 hawksbills and 4 loggerhead turtles.

References and links:

››› Kakai, T. M. (2019). Assessing the effectiveness of LED lights for the reduction of sea turtle bycatch in an artisanal gillnet fishery-a case study from the north coast of Kenya. Western Indian Ocean Journal of Marine Science, 18(2), 37-44. https://www.ajol.info/index.php/wiojms/article/download/174565/181346
Mwatha, G. K. (2002). Assessment of the Prawn Fishery, Bycatch, Resource use Conflicts and Performance of the Turtle Excluder Device.
https://aquadocs.org/bitstream/handle/1834/7219/ktf0134.pdf?sequence=1&isAllowed=y

c) Frequency and pathology of disease in marine turtles

Details (disease, incidence, species and genetic stock):
››› Fibropapillomatosis is well documented in green turtles in Kenya (Church and Palin 2003; Zanre 2005). Two recent studies report the incidence of fibropapillomatosis in Kenya (Jones et al. 2021; Hancock et al. 2023). Ongoing research is being conducted by Pwani University looking at the etiology of the disease and genetic expression. A recent study evaluated the potential links between environmental contamination and disease (Oduor et al. 2024). Signs of diseases are recorded during necropsies conducted on some stranded individuals. An unnamed skin disease has also been observed on some stranded or dead turtles in the KMNR (Church and Palin 2003).

References and links:

››› Hancock, J. M., Choma, J., Mainye, L., Wambi, P., Stelfox, M., Polyak, M. M., ... & Köhnk, S. (2023). Using Photo-ID to document and monitor the prevalence of fibropapilloma tumours in a foraging aggregation of green turtles. Frontiers in Marine Science, 10, 1217683.
https://www.frontiersin.org/articles/10.3389/fmars.2023.1217683/pdf
Ibrahim, A. A. (2023). Fibropapillomatosis in Green Sea Turtles in Kenya:: Prevalence of Chelonid Herpesvirus 5 in Tumor and Non-Tumor tissue. Degree Project. https://www.diva-portal.org/smash/get/diva2:1805251/FULLTEXT01.pdf
Jones, S. M., Caspi, I., & Lucas, C. (2021). Fibropapillomatosis infection in a population of green turtles at Watamu Bay, Kenya. Western Indian Ocean Journal of Marine Science, 20(1), 111-123.
https://www.ajol.info/index.php/wiojms/article/download/205542/199499
Oduor, N. A., Munga, C. N., Imbayi, L. K., Botwe, P. K., Nyanjong, E. O., Muthama, C. M., ... & Moosdorf, N. (2024). Anthropogenic nutrients and phytoplankton diversity in Kenya's coastal waters: An ecological quality assessment of sea turtle foraging sites. Marine Pollution Bulletin, 199, 115897.
https://www.sciencedirect.com/science/article/pii/S0025326X23013322

d) Genetic studies

Details (species and genetic stock):
››› A study conducted by Jensen et al. (2020) investigated the spatial ecology of juvenile green turtles (Chelonia mydas) in Kenya, as well as other locations in the Western Indian Ocean (WIO) used a combination of molecular genetics and ocean drift simulations to understand the spatial ecology of juvenile green turtles in Kenya. See details on 3.1.3.

References and links:

››› Jensen, M. P., Dalleau, M., Gaspar, P., Lalire, M., Jean, C., Ciccione, S., ... & Bourjea, J. (2020). Seascape genetics and the spatial ecology of juvenile green turtles. Genes, 11(3), 278. Link

e) Socio-economic studies within communities that interact with marine turtles and their habitats

Details (aim of study, methods, results):

››› Socio-economic studies pertaining to communities that engage with marine turtles and their habitats in Kenya are not sufficiently comprehensive in the existing literature. Nevertheless, one study conducted by Erick et al. (2022) sheds light on the economic, ecological, and social significance of turtles in Kenya. However, it does not explicitly address the specific aspects of socio-economic studies related to marine turtles.

References and links:
›››
ttps://www.researchgate.net/publication/362052965_Reviewing_the_Status_of_Turtles_in_Kenyan_Aquatic_Ecosystems_Threats_and_Current_Conservation_Efforts

f) Evaluation of the efficacy of conservation activities for marine turtles and their habitats

Details (types of activities assessed, participation of local communities in the evaluaton, methods, results):
››› Kenya has made sea turtle conservation a priority, with multiple organizations and initiatives working to address the decline in turtle populations and the threats they face. Several key efforts and strategies have been implemented, including nest monitoring and protection, bycatch mitigation, photo identification, training, and capacity development. Community-based conservation groups have also played a crucial role in increasing local participation and awareness to support turtle conservation. The Sea Turtle Conservation Protocol in Kenya further demonstrates the commitment to addressing the various threats facing sea turtles, such as fishing, pollution, coastal development, direct off-take, and climate change. This protocol aims to guide and enhance sea turtle conservation activities through community engagement, stakeholder involvement, conservation research, and training.

References and links:

››› ● https://www.tusk.org/projects/lamu-marine-conservation-trust/
● https://www.tourism.go.ke/launch-of-the-sea-turtle-conservation-protocol-in-kenya/

3.2 COLLABORATIVE RESEARCH AND MONITORING

Provide sources of information supporting the above responses, include reports (governmental, departmental, university, NGO, etc.) as well as published articles (scientific or online articles); also include appropriate links to these information sources and/or attach documents to this report.

3.2.1 Does your country participate in any regional or sub-regional action plans that identify regional priorities in terms of research and monitoring needs?

☑ YES

Please specify:

If more rows are required, please contact the secretarat at iosea@un.org

	Regional or sub-regional action plan	Identified research and monitoring needs	Links

3.2.2 On which of the following themes have regional collaborative studies and monitoring been conducted? Use the text boxes to describe the nature of this international collaboration or to clarify your response. Answer 'NO' if the studies/monitoring undertaken do not involve international collaboration.

a) Reproductive biology (including any of the following: nesting data, hatchling survival, nest protection, recruitment, etc.)

☑ NO

b) Genetic characterization

☑ YES

Details (year when collaboration took place, project name, future plans):

››› See 3.1.3.

c) Migratory and dispersal routes
☑ YES

Details (year when collaboration took place, project name, future plans):

››› See 3.1.3.

3.3 DATA ANALYSIS AND APPLIED RESEARCH

Provide sources of information supporting the above responses, include reports (governmental, departmental, university, NGO, etc.) as well as published articles (scientific or online articles); also include appropriate links to these information sources and/or attach documents to this report.

3.3.1 Describe how research results are being applied to improve management practices and mitigation of threats.

Details:
››› The WRTI and KWS launched the Sea Turtle Conservation Protocol in 2022 to serve as a guide in sea turtle conservation activities. The protocol will embrace community engagement, stakeholder involvement, conservation research, and training in addressing pressures on marine ecosystems and species.
The Kenya Sea Turtle Conservation Committee (KESCOM) was established in 1993 to fulfill the need for a national multi-sector partnership that aimed at bringing government institutions and private agencies in support of the conservation and management of sea turtles in Kenya. KESCOM has successfully campaigned for the mandatory use of Turtle Excluder Devices (TEDs) in all trawlers operating within Kenyan waters.
The Olive Ridley Project (ORP) data collection tool the Photo-ID uses diverse monitoring techniques such as snorkeling, diving surveys, drone surveys, and citizen science to evaluate sea turtle temporal and spatial distribution, as well as abundance. The data collected allows ORP to map high-priority conservation areas along the south coastline, identify the major threats that sea turtles face in these coastal ecosystems, and develop targeted sea turtle monitoring and conservation activities.

References and links:

››› Okemwa, G.M., Nzuki, S., Mueni, E.M. 2004. The status and conservation of sea turtles in Kenya. Marine Turtle Newsletter 105: 1-6. http://hdl.handle.net/1834/7717
https://www.iotn.org/iotn09-04-advances-in-sea-turtle-conservation-in-kenya/
https://www.tourism.go.ke/launch-of-the-sea-turtle-conservation-protocol-in-kenya/
https://oliveridleyproject.org/about-us/where-we-work/kenya

3.3.2 Is traditional knowledge on marine turtles and their habitats being used for conservation and management?
☑ UNSURE

3.4 INFORMATION EXCHANGE
Provide sources of information supporting the above responses, include reports (governmental, departmental, university, NGO, etc.) as well as published articles (scientific or online articles); also include appropriate links to these information sources and/or attach documents to this report.

3.4.1 Has your country undertaken any initiatives (nationally or through collaboration with other IOSEA Signatory States) to standardise methods of data collection?
☑ YES

If yes, please give details of the agreed protocol(s).

Details:
››› In 2022, the Wildlife Research and Training Institute and Kenya Wildlife Service (KWS) launched a sea turtle

protocol to standardize data collection methods for the benefit of marine biodiversity
The WWF Kenya has Integrated Sea Turtle Conservation Program, in collaboration with partners and sponsors, in the harmonization of data collection protocols along the Kenyan coast
Likewise, Olive Ridley Project are working to introduce and implement the use of photo-identification as a low-cost, non-invasive and citizen-science friendly monitoring method to increase knowledge and understanding of sea turtle distribution in marine ecosystems and the major threats they face. The group focuses on building local capacity to use Photo-ID for monitoring sea turtles following a standardized data collection, management and analysis protocol, and looks into expanding to several regions along the coast.

Reference and links:

››› ● https://www.wwfkenya.org/sea_turtle_conservation/
● https://www.tourism.go.ke/launch-of-the-sea-turtle-conservation-protocol-in-kenya/
● Hancock, J. M., Choma, J., Mainye, L., Wambi, P., Stelfox, M., Polyak, M. M., ... & Köhnk, S. (2023). Using Photo-ID to document and monitor the prevalence of fibropapilloma tumours in a foraging aggregation of green turtles. Frontiers in Marine Science, 10, 1217683.
https://www.frontiersin.org/articles/10.3389/fmars.2023.1217683/pdf

3.4.2 Has your country taken part in producing IUCN regional status reports for red list assessments?

☑ YES

Details (year when more recent collaboration took place, project name, links):

››› The latest assessment for the Southwest Indian Ocean Regional Management Units (MTSG, 2023 in press) included a thorough review of Kenya, headed by the IUCN Marine Turtle Specialist Group Members Dr. Casper Van der Geer (Univ. of Exeter) and assisted by Dr. Joana Hancock (Olive Ridley Project).
The establishment of the Kenya Species Specialist Group in 2023 is a significant initiative that will follow IUCN Regional/National guidelines to assess the conservation status of priority species in Kenya

3.4.3 How often does your country share information on marine turtle populations of regional interest with other IOSEA Signatories?

☑ every 3 years

Details:

››› While not specifically to IOSEA signatories, different research/conservation groups have actively shared project outcomes in relevant national and international conferences and meetings, including the International Sea Turtle Symposium, WIOMSA, WRTI scientific meetings.

3.4.4 Since 2019, has your country taken part in any workshops or other events with participation of other countries, scientific institutions, non-governmental or international organisations in order to develop and implement best practice approaches for marine turtle conservation?

☑ YES

Details (name of the event, year, main objective of the event):

››› Sea turtle special session during the 2022 WIOMSA Symposium in South Africa

OBJECTIVE IV: INCREASE PUBLIC AWARENESS OF THE THREATS TO MARINE TURTLES AND THEIR HABITATS, AND ENHANCE PUBLIC PARTICIPATION IN CONSERVATION ACTIVITIES

4.1 PUBLIC EDUCATION AND INFORMATION PROGRAMMES

Provide sources of information supporting the above responses, include reports (governmental, departmental, university, NGO, etc.) as well as published articles (scientific or online articles); also include appropriate links to these information sources and/or attach documents to this report.

4.1.1 Are education/awareness programmes in place at/near nesting beaches?

☑ YES

Please indicate at which sites, described in question 0.2 these programmes are being implemented.

Details:
››› 1. Kiunga Marine National Reserve - KICOWA
2. Lamu Island - LAMCOT
3. Kipini – TAFMEN/Bahari hai
4. Marereni – MABICO/Bahari hai
5. Ngomeni – Bahari hai
6. Kichwa cha kati – Bahari hai
7. Sabaki – Bahari hai
8. Malindi - KWS
9. Watamu – Bahari hai, LOC, KWS
10. Kuruwitu – Oceans Alive, Bureni Turtle Watch
11. Jumba ruins – Rodger
12. Mombasa – Baobab Trust, KWS
13. Tiwi/Waa – Nyari Kikadini BMU, Tiwi Turtle Police
14. Diani – Diani Turtle Watch, Olive Ridley Project
15. Msambweni/Shimoni – Olive Ridley Project, Msambweni TCG, Shimoni Turtle Watch

References and links:

››› Kiunga Community Wildlife Association
https://web.facebook.com/people/Kiunga-community-wildlife-association/100091129748652/?_rdc=1&_rdr
Lamu Conservation Trust
https://lamuconservationtrust.org/marine/marine-life
Bahari Hai Conservation
https://baharihai.org/our-work/sea-turtle-conservation/
Marereni Biodiversity Conservation
https://web.facebook.com/groups/772365150333831/?_rdc=1&_rdr
Local Ocean Conservation, Watamu
https://localocean.co/
Oceans Alive
https://www.oceansalive.org/
Roger Jessop
https://nation.africa/kenya/health/threats-driving-sea-turtles-to-extinction-4314072
Baobab Trust
https://web.facebook.com/baobabtrust
Tiwi Turtle Police
http://maishamadrugadafoundation.org/
Diani Turtle Watch
https://localocean.co/diani-turtle-watch/
Olive Ridley Project
https://oliveridleyproject.org/about-us/where-we-work/kenya
Msambweni TCG
https://m.facebook.com/p/Msambweni-Turtle-and-Marine-Conservation-Group-100064834592625/
KWS
https://www.kws.go.ke/content/watamu-marine-national-park-reserve

4.1.2 Describe the educational materials, including mass media information programmes that your country has collected, developed and/or disseminated.

Details/future plans:
››› Video tapes on sea turtles and the marine environment

Brochures
Posters
Stickers and stamp issues
Websites
Social media posts
Exchange programs between Turtle Conservation Groups (TCGs)
T-Shirts
Annual awareness days; World Sea Turtle Day, International Coastal Cleanup
Contribution to the IOSEA website and www.seaturtle.org
Mass media information through national newspapers
Talking walls in schools
Radio talk shows
Blogs

References and links:

››› WWF-Kenya Video Documentary
https://youtu.be/wpjH0Fzrz-g?si=gvUYJSrLZds7mvOX
Kiunga Community Wildlife Association
https://web.facebook.com/people/Kiunga-community-wildlife-association/100091129748652/?_rdc=1&_rdr
Lamu Conservation Trust
https://lamuconservationtrust.org/marine/marine-life
Bahari Hai Conservation
https://baharihai.org/our-work/sea-turtle-conservation/
Marereni Biodiversity Conservation
https://web.facebook.com/groups/772365150333831/?_rdc=1&_rdr
Local Ocean Conservation, Watamu
https://localocean.co/
Oceans Alive
https://www.oceansalive.org/
Roger Jessop
https://nation.africa/kenya/health/threats-driving-sea-turtles-to-extinction-4314072
Baobab Trust
https://web.facebook.com/baobabtrust
Tiwi Turtle Police
http://maishamadrugadafoundation.org/
Diani Turtle Watch
https://localocean.co/diani-turtle-watch/
Olive Ridley Project
https://oliveridleyproject.org/about-us/where-we-work/kenya
Msambweni TCG
https://m.facebook.com/p/Msambweni-Turtle-and-Marine-Conservation-Group-100064834592625/
KWS
https://www.kws.go.ke/content/watamu-marine-national-park-reserve

4.1.3 Which of the following groups have been the targets of focused education or awareness programmes?

☑ Fishing industry
☑ Communities that interact with marine turtles and their habitats
☑ Local/Fishing communities
☑ Indigenous groups
☑ Teachers
☑ Students
☑ NGOs
☑ Enforcement personnel
☑ judicial personnel

Details, if necessary:

››› All groups and/or organizations involved in sea turtle conservation carry out education/awareness programmes that target one or more of the categories of stakeholders outlined above.

References and links:

››› Kiunga Community Wildlife Association
https://web.facebook.com/people/Kiunga-community-wildlife-association/100091129748652/?_rdc=1&_rdr

Lamu Conservation Trust
https://lamuconservationtrust.org/marine/marine-life
Bahari Hai Conservation
https://baharihai.org/our-work/sea-turtle-conservation/
Marereni Biodiversity Conservation
https://web.facebook.com/groups/772365150333831/?_rdc=1&_rdr
Local Ocean Conservation, Watamu
https://localocean.co/
Oceans Alive
https://www.oceansalive.org/
Roger Jessop
https://nation.africa/kenya/health/threats-driving-sea-turtles-to-extinction-4314072
Baobab Trust
https://web.facebook.com/baobabtrust
Tiwi Turtle Police
http://maishamadrugadafoundation.org/
Diani Turtle Watch
https://localocean.co/diani-turtle-watch/
Olive Ridley Project
https://oliveridleyproject.org/about-us/where-we-work/kenya
Msambweni TCG
https://m.facebook.com/p/Msambweni-Turtle-and-Marine-Conservation-Group-100064834592625/
KWS
https://www.kws.go.ke/content/watamu-marine-national-park-reserve

4.14 Have any community learning centres or information centres been established in your country?

☑ YES

Details/future plans:

››› Local Ocean Conservation runs a marine education centre at the Sands at Nomad hotel in Diani Beach.
https://www.thesandsatnomad.com/education-community-outreach/
Oceans Alive has established an information centre in Kuruwitu.
https://www.oceansalive.org/copy-of-aquaculture
Msambweni TCG-has an information centre in Msambweni.
https://oliveridleyproject.org/kenya-news/orp-kenya-news-issue-4-2021

4.2 STAKEHOLDER PARTICIPATION

Provide sources of information supporting the above responses, include reports (governmental, departmental, university, NGO, etc.) as well as published articles (scientific or online articles); also include appropriate links to these information sources and/or attach documents to this report.

4.2.1 Are there public participation programmes in place at nesting beaches to involve local stakeholders in activities to conserve marine turtles?

☑ YES

If yes, which stakeholders are being involved?

☑ Fishing industry
☑ Communities that interact with marine turtles and their habitats
☑ Local/Fishing communities
☑ Indigenous groups
☑ Tourists
☑ Media
☑ Teachers
☑ Students
☑ Military, Navy, Police
☑ Scientists
☑ NGOs
☑ Enforcement personnel
☑ Judicial personnel

Please indicate at which sites, described in question 0.2 these programmes are being implemented.

Details/future plans:
››› There are various public participation programmes at nesting beaches. These include education/awareness programmes, nest translocation, nest monitoring/beach patrol, hatchling release and beach cleans

References and links:

››› Kiunga Community Wildlife Association
https://web.facebook.com/people/Kiunga-community-wildlife-association/100091129748652/?_rdc=1&_rdr
Lamu Conservation Trust
https://lamuconservationtrust.org/marine/marine-life
Bahari Hai Conservation
https://baharihai.org/our-work/sea-turtle-conservation/
Marereni Biodiversity Conservation
https://web.facebook.com/groups/772365150333831/?_rdc=1&_rdr
Local Ocean Conservation, Watamu
https://localocean.co/
Oceans Alive
https://www.oceansalive.org/
Roger Jessop
https://nation.africa/kenya/health/threats-driving-sea-turtles-to-extinction-4314072
Baobab Trust
https://web.facebook.com/baobabtrust
Tiwi Turtle Police
http://maishamadrugadafoundation.org/
Diani Turtle Watch
https://localocean.co/diani-turtle-watch/
Olive Ridley Project
https://oliveridleyproject.org/about-us/where-we-work/kenya
Msambweni TCG
https://m.facebook.com/p/Msambweni-Turtle-and-Marine-Conservation-Group-100064834592625/
KWS
https://www.kws.go.ke/content/watamu-marine-national-park-reserve

4.2.2. The role of local communities. Please answer the questions below, giving examples of activities that took place since 2019.

a) Is traditional knowledge used in the development of education and awareness programmes in your country?
☑ YES

Details, examples:

››› Traditional knowledge, though undocumented, is used to educate beach rangers on sea turtle nest verification.

b) Do local communities communities participate in the development and implementation of conservation measures?

Details, examples:
››› Local communities were actively involved in development of the sea turtle conservation protocol in Kenya. The protocol was launched in December 2022 by the Ministry of Tourism and Wildlife
https://www.tourism.go.ke/launch-of-the-sea-turtle-conservation-protocol-in-kenya/
Local communities get involved in protecting sea turtles through day to day running of sea turtle conservation projects. They are involved in, protecting nesting mothers, nest monitoring and hatchling release. Additionally, through setting up local community managed MPAs, they participate in protection of sea turtle habitats and in-water sea turtle population https://baharihai.org/our-work/sea-turtle-conservation/ ;
https://cordioea.net/local-marine-resource-management/overview/;
https://storymaps.arcgis.com/stories/6abe6f1a62c94f56970ac3cf6419f638

4.2.3 Describe initiatives undertaken or planned since 2019 to involve and encourage the cooperation of Government institutions, NGOs and the private sector in marine turtle conservation programmes.

Details/future plans:
››› Development of the sea turtle conservation protocol for Kenya will enhance the network between sea turtle conservation groups along the coast and improve coordination of sea turtle conservation nationally. Collaboration between the local community and private business owners, like the Tiwi Turtle Police is an

example of a beach hotel working directly with the local community to protect sea turtles.

References and links:

›››› https://www.tourism.go.ke/launch-of-the-sea-turtle-conservation-protocol-in-kenya/
http://maishamadrugadafoundation.org/

OBJECTIVE V: ENHANCE NATIONAL, REGIONAL, AND INTERNATIONAL COOPERATION

5.1 COOPERATION NEEDS

Provide sources of information supporting the above responses, include reports (governmental, departmental, university, NGO, etc.) as well as published articles (scientific or online articles); also include appropriate links to these information sources and/or attach documents to this report.

5.1.1 Please indicate, the extent to which the following local management issues require regional and/or international cooperation in order to achieve progress.

In other words, how important is **regional/international c**ooperation for addressing the issues listed below?

a) Illegal fishing in territorial waters

☑ IMPORTANT

b) Incidental capture by foreign fleets in territorial waters

☑ ESSENTIAL

c) Enforcement/patrolling of territorial waters

☑ IMPORTANT

d) Illegal fishing in EEZ

☑ ESSENTIAL

e) Incidental capture by foreign fleets in EEZ

☑ ESSENTIAL

f) Enforcement/patrolling of EEZ

☑ ESSENTIAL

g) Harvest exploitation of turtles and eggs

☑ LIMITED

h) Illegal trade in turtle parts and products

☑ IMPORTANT

i) Development of gear technology to reduce bycatch of marine turtles

☑ ESSENTIAL

j) Marine pollution, including oil spills and marine debris

☑ ESSENTIAL

k) Training / capacity-building

☑ ESSENTIAL

l) Alternative livelihood development

☑ ESSENTIAL

m) Characterisation of turtle populations/genetic stocks

☑ ESSENTIAL

n) Identification of migration routes

☑ ESSENTIAL

o) Tagging / satellite tracking

☑ ESSENTIAL

p) Habitat studies
☑ ESSENTIAL

q) Genetic studies

☑ ESSENTIAL

5.2 COOPERATION AND INFORMATION EXCHANGE

5.2.1 Regional cooperation to enhance marine turtle conservation and management

a) Which regional/bilateral agreements for marine turtle conservation and management does your country participate in?

Details:
››› The Nairobi Convention
WIOCOMPASS (Certification program under WIOMSA)

b) Please list the organizations that your country cooperates with to enhance regional collaboration on marine turtle conservation in your subregion.

Details:
››› the Nairobi Convention
WIOMSA
IUCN
WWF
IFAW
Olive Riddley
WCS

5.2.2 Has your country encouraged Regional Fishery Management Organizations (RFMOs) in the Indian Ocean to adopt marine turtle conservation measures within Exclusive Economic Zones (EEZs) and on the high seas? Please describe the interventions made by your country in this regard in the last 5 years, referring to specific RFMOs.

Details/future plans:
››› the Country, under the Indian Ocean Tuna Commission, adopted the Resolution 12/04 on the conservation of marine turtles, calling for the avoidance of encircling sea turtles and release of sea turtles by fishing vessels.

5.2.3 Please describe any additional efforts of your country to enhance sub-regional turtle conservation.

Details/future plans:
››› There are efforts to establish a Marine Transboundary Conservation Area between Kenya and Tanzania

5.3 CAPACITY-BUILDING

Provide sources of information supporting the above responses, include reports (governmental, departmental, university, NGO, etc.) as well as published articles (scientific or online articles); also include appropriate links to these information sources and/or attach documents to this report.

5.3.1 Describe your country's needs in terms of human resources, knowledge and facilities, in order to build capacity to strengthen marine turtle conservation measures in the IOSEA region.

Details:
››› The country needs to upscale its human capacity in turtle conservation by enhancing: -
1. enhancing capacity and infrastructure to conduct forensic DNA analysis capacity and expertise to enhance monitoring, surveillance, and enforcement capacity
2. Enhance enforcement through advanced acquisition of effective and efficient Patrol boats and surveillance equipment including drones
3. Provision of Vehicles to enable access to the vast areas designated as sea turtle nesting habitats
4. Training in field techniques, including Camping, handling of sea turtles and translocation of sea turtles' nests
5. Adoption of technology to establish functional and accessible data collection tools and a database, including Data collection equipment.
6. Sea turtle rescue and rehabilitation capacity and infrastructure at all key nesting beaches
7. Capacity to ecological monitor key sea turtles' habitats including seagrass beds, coral reefs, and mangroves

8. Capacity to conduct restoration of degraded marine ecosystems, which serve as habitats for sea turtles

5.3.2 Describe any training your country provided in marine turtle conservation and management in the last 5 years (e.g., workshops held, training manuals produced etc.), and indicate your plans for the coming year.

Details/future plans:
››› The development of the sea turtle's conservation protocols and training of sea turtles' conservation groups in implementing these protocols and adoption of technologies to collect and share sea turtles' conservation data.

5.3.3 Specifically in relation to capacity-building for the conservation of marine turtles and their habitats, describe any partnerships with universities, research institutions, training bodies and other relevant organisations, national, regional, and/or international.

Details/future plans:
››› in Kenya, currently there is a strong link with the national universities, research institutions and the management authorities on sea turtle conservation. These have strongly supported communities

5.4 STRATEGY AND LEGISLATION

Provide sources of information supporting the above responses, include reports (governmental, departmental, university, NGO, etc.) as well as published articles (scientific or online articles); also include appropriate links to these information sources and/or attach documents to this report.

5.4.1 Development of a national action plan

a) Is there a national action plan for the conservation of marine turtles and their habitats in your country?
☑ YES

Details:

title of the document, year, link:
››› The National Sea Turtle Conservation Strategy and a new sea turtle action plan is currently under preparation

b) If there is no action plan yet, has a set of key management measures been identified that could eventually serve as a basis for a more specific action plan at a national or local level?
☑ NO

Details:

Title of the documents, year, link:
››› the National Sea turtle action plan is currently being prepared

c) List the genetic stocks (marine turtle populations) identified as priorities in the national action plan or in other action plans for conservation of biodiversity in your country.

Details/future plans:
››› the process is currently ongoing and would be finalised within the year 2024

5.4.2 Which are the main threats to marine turtles in your country per species and the most urgent management activites to address them?

Please list up to 5 corresponding activities from the IOSEA Conservation and Management Plan (**CMP**).
››› 1. Encroachment of nesting beaches by coastal development
2. Pollution from both domestic and industrial waste
3. Fishing activities, including artisanal and industrial fishing, mainly trawling and ringnets
4. Vessel strikes and increase maritime activities.
5. Poaching of both meat, eggs and oil of sea turtles due to a strong cultural beliefs that ensure sustained demand for sea turtles products

5.4.3 Has your country conducted a review of policies and laws to address any inconsistencies in relation to the conservation of marine turtles and their habitats?
☑ NO

Details, future plans:

››› the existing laws have strongly protected sea turtles in Kenya. The challenge has been implementation and lack of adequate resources. These laws provide a strong basis for conservation. The only recent development has been the enhancement of penalties for illegal take off or fishing of sea turtles that has functioned as a deterrent.

5.4.4 Which of the threats to marine turtles are not currently addressed by any policy or law in your country?

Details:
››› all te key threat are addressed by the existing legislation

5.4.5 Does your country have legislation that explicity requires marine and coastal development projects and natural resource extraction projects to be accompanied by an Environmental Impact Assessment (EIA) in relation to marine turtles and their habitats?

☑ YES

a) If yes, please provide references to legal texts, date of adoption and briefly describe such legislation.

Details:
››› the Environmental Management and Coordination Act requires an EIA to be carried out for all development projects. an EIA license is a key legal requirement for all development projects

b) Which measures are in place to ensure compliance with this regulation?

References and links:
››› There is a requirement for public participation in the EIA process for all projects. Further, an Environmental Management Plan is required before any project is licensed.

OBJECTIVE VI: PROMOTE IMPLEMENTATION OF THE MOU, INCLUDING THE CMP

6.1 IOSEA MARINE TURTLE MOU MEMBERSHIP AND ACTIVITIES

Provide sources of information supporting the above responses, include reports (governmental, departmental, university, NGO, etc.) as well as published articles (scientific or online articles); also include appropriate links to these information sources and/or attach documents to this report.

6.1.2 Is you country currently favourable, in principle, to amending the MOU to make it a legally binding instrument?

☑ YES

Use the text box to elaborate on your response, if necessary.
››› The Constitution of Kenya automatically adopts the provision of any Multilateral Agreement as being a legal instrument for use locally. This implies the MOU is basically legally binding. To further ensure neighbouring countries follow suit, there is need to make the MOU as legally binding

6.2 RESOURCES TO SUPPORT IMPLEMENTATION OF THE MOU

Provide sources of information supporting the above responses, include reports (governmental, departmental, university, NGO, etc.) as well as published articles (scientific or online articles); also include appropriate links to these information sources and/or attach documents to this report.

6.2.1 What programmes has your country funded for domestic implementation of marine turtle conservation activities related to the IOSEA Marine Turtle MOU?

Please refer to the IOSEA CMP and IOSEA Work Programme.
Name of the funded programme, corresponding CMP acitivty or IOSEA Work Programme measure:
››› see attached table

You have attached the following documents to this answer.

ongoing_monitoring_programmes.docx - Ongoing programs

6.2.2 In the last 5 years, what funding sources have been available for your country to support marine turtle conservation?

☑ YES

Details: (national, other governments, international organisations, donor organisations, industry, private sector, foundations)

You have attached the following documents to this answer.

ongoing_monitoring_programmes.docx

6.2.3 In accordance with CITES decisions on marine turtles, has your country attempted to raise funds for the activities listed below through CITES?

☑ NO

6.3 COORDINATION AMONG GOVERNMENT AGENCIES

Provide sources of information supporting the above responses, include reports (governmental, departmental, university, NGO, etc.) as well as published articles (scientific or online articles); also include appropriate links to these information sources and/or attach documents to this report.

6.3.1 List government agencies that play a role in the conservation and management of marine turtles and their habitats in your country. Please indicate their responsibilities in relation to protecting marine turtles and their habitats.

If more rows are required, please contact the secretarat at iosea@un.org

	Name of the agency	Role in the conservation of marine turtles and their habitats
	Fisheries regulations	Kenya Fisheries Service
	Enforcement of Conservation measures	Kenya Wildlife Service
	Research and capacity building	Wildlife Research and Training Institute

	Research	Kenya Marine and Fisheries Research Institute
	Environmental management and Coordination	National Environment Management Authority

6.3.2 What are the main limitations of enforcing the laws in relation to marine turtles and their habitats across and between jurisdictions?

Details:
››› Mostly the limited capacity in both personnel and infratsruture